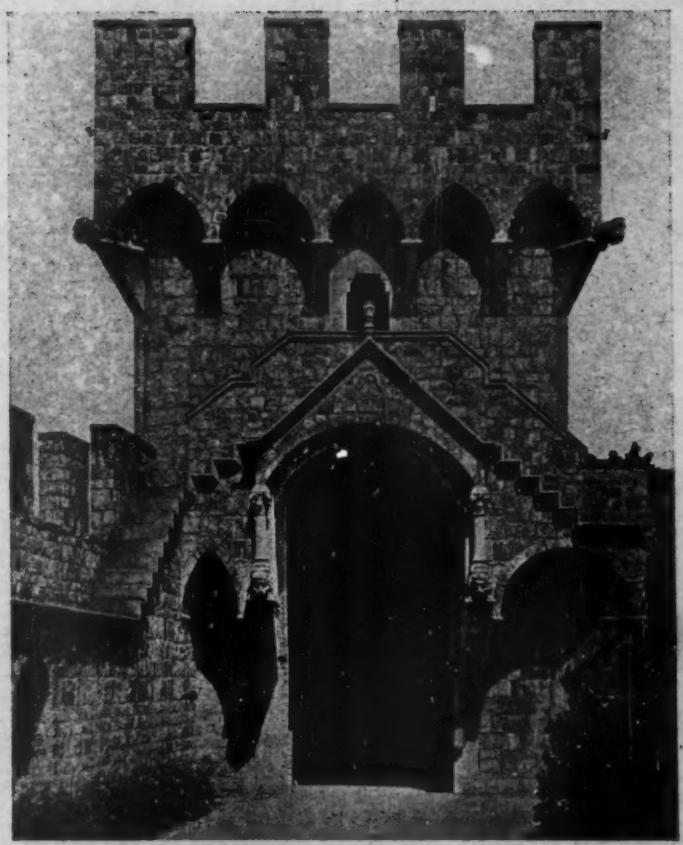
THE AMERICAN ARCHITECT

WILMINGTON INSTITUTE FREE LIBRARY



ENTRANCE GATE TO THE CASTLE OF V CIGLIATA, FLORENCE

PUBLISHED WEDNESDAYS IN NEW YORK
FOUNDED EIGHTEEN HUNDRED SEVENTY SIX
VOLUME CXVII JANUARY 7, 1920 NUMBER 2298

RAYMOND CONCRETE PILES

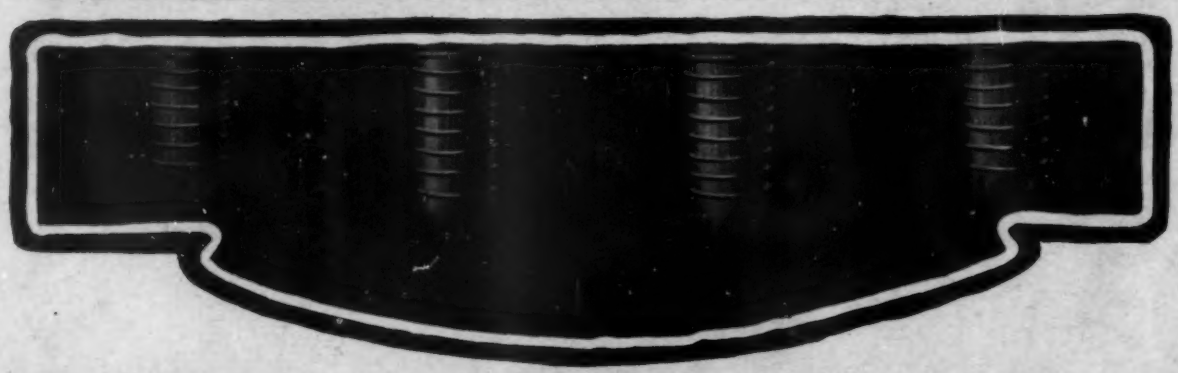
Follow the Accepted Principle of Concrete Engineering

which is, to pour concrete into a protective "form," whose function is to mould and protect it while it attains hardness and strength.

Every standard Raymond Concrete Pile is cast-in-place in a spirally reinforced steel shell (or form), whose function is to insure correct length and taper and to protect the "green" concrete column against distortion. This shell is *left in the ground*—a Raymond feature.

RAYMOND CONCRETE PILE CO.

A Form for Every Pile—A Pile for Every Purpose



The American Architect, published weekly at 243 West 39th Street, New York, N. Y. Entered as scond class matter January 6th, 1909, at the Post Office at New York, N. Y., under the act of March 3rd, 1879. Subscription price in the United States and Possessions, $10.00 per year. Issue No. 2298 dated January 7, 1920

HOUSE OF J. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND

JOHN RUSSELL POPE, *ARCHITECT*

THE AMERICAN ARCHITECT

VOL. CXVII WEDNESDAY, JANUARY 7, 1920 NUMBER 2298

The Architect and Public Service*

By GLENN BROWN, *F. A. I. A*

NO profession has a right to existence unless it serves the people.

The architect as chief builder (architectiön), for satisfactory and efficient service, must have the mentality to plan and design, the capacity to construct, with a knowledge of materials and stresses, and the ability to manage varied business operations. If we glance back through history, or consider the great men of our own times, we find that those whose work stands as an inspiration to the public had these fundamental qualities.

The public, to satisfy its needs, requires good planners to obtain the most economical and efficient grouping of the utilities and æsthetics, good designers to present a harmonious artistic composition to please the eye, good constructors to secure safe and durable structures, good business men to conserve money and prevent financial or managerial complications.

The chief builder (architect) in planning considers the arrangement of space, the character of structural features, the cost of products, and combines and harmonizes the utilitarian and artistic elements of the structure.

With these fundamental functions under one control, efficiently administered, the client is pleased, the public is served and the architect is rendered a dominant and useful factor. With the control divided into separate forces with no dominant influence, and any of the elements inefficiently executed, the client is displeased, the public loses and the architect becomes a minor factor in producing results.

It may be useful to trace the trend of the architects of our day and see how they have fulfilled their duty, and what right they have to survive as a profession.

We had from colonial days to the Civil War practitioners—first in the East, then in the far South and on the Pacific Coast—who zealously cultivated small spots in a vast arid desert.

Organization of these men appealed to many as a solution of what was the greatest public good and the surest professional advance.

The American Institute of Architects, founded in 1857, was the first practical organization of the profession to attain better construction, more efficient business methods and higher ideals in plan and design. The founders hoped to combine the efforts of all capable practitioners, quality and capacity being the important element, to raise the standard of the least efficient and make the profession an efficient and useful instrument in the public service.

While the progress of the Institute was slow in attaining its ends and it was found difficult to arouse either public or professional interest, the high standing of its presidents, like Richard Upjohn, Thomas U. Walter, Richard M. Hunt, George B. Post, as well as of the directorate and members, gave the Institute standing and influence. The unselfish and indefatigable labors of secretaries like A. J. Bloor and Alfred Stone kept the organization together and increased its scope and efficiency.

During my service as secretary, 1899 to 1914, the Institute grew rapidly as an acknowledged and weighty factor in the public service, because of the national character, capacity and business acumen of the presidents under whom I served, like Henry Van Brunt, Robert S. Peabody, Charles F. McKim, W. S. Eames, Cass Gilbert, I. K. Pond, and from the high standing of its directors who with rare exceptions were men appreciated nationally for their work in plan and design, construction and business capacity. The broad acquaintance of the presidents with men of affairs, officials, the prominent in literature and art and social life, was used without stint in efforts to secure the best results in the Fine Arts. Conventions and board meetings were arranged to secure public and official attention. During Robert S. Peabody's administration a convention was held, during the Session of Congress, devoted to the development of Washington City, at which numerous schemes and papers were presented by prominent men; the first important discussion of city planning. These papers and dis-

*This is the first of a series of articles by Glenn Brown on Architecture in the United States, past and present. The second article will appear in an early issue.

Copyright, 1920, The Architectural & Building Press, (Inc.)

cussions so impressed Congress that the Senate appointed the Park Commission, and their report was hailed by laymen and experts in this country and Europe as a great solution of the problem.

A notable example of the power of social prestige was illustrated in the celebrated McKim dinner, so called because Charles F. McKim organized and managed the affair to the most trivial detail. Starting six months before the occasion, McKim, by his personal charm and magnetism, enthused, I was about to say hypnotized, many prominent men, among them Nicholas Murray Butler and Elihu Root, inducing them to spread the information that the leaders of industry, government science and literature should meet and take practical steps to advance the Fine Arts. Every phase of the country's interests was to be represented by the man at the top. The dinner was such a success that to-day, some fifteen years after the event, it is spoken of as the most notable event of the kind ever held in Washington. Seventy-five leading men were at the head table, among whom may be mentioned Theodore Roosevelt, President of the United States; John Hay, Secretary of State; Elihu Root, Secretary of War; Joseph Cannon, Speaker of the House; Senator Wetmore, Chairman Library Committee; Jusserand, Ambassador of France; Cardinal Gibbons, Prelate of the Church of Rome; Bishop Satterlee, of the Episcopal Diocese of Washington; Admiral Dewey, the Navy; Gen. Chaffee, Chief of Staff, the Army; J. Pierpont Morgan, Financier; Justice Harlan, Judiciary; Henry Walters, Art Collector; Augustus Saint Gaudens, Sculptor; John LaFarge, Painter; Charles Dana Gibson, Illustrator; Simon Newcomb, Scientist. This dinner resulted in contributions of six hundred thousand dollars for the American Academy in Rome.

Cass Gilbert, during his administration, organized a notable event in the memorial meeting to Augustus Saint Gaudens. In the Corcoran Gallery of Art was assembled, attractively installed, one hundred and fifty pieces of sculpture by Augustus Saint Gaudens. Each ambassador at the time in Washington was invited and participated in a tribute to the world-known artist. Roosevelt, President of the United States, and Elihu Root, Secretary of State, gave well-considered and glowing tributes to the American artist, while Jusserand claimed him for his French ancestry, and Bryce for his Irish nativity. This exhibition, transferred to Pittsburgh, Chicago and Indianapolis, gave over 500,000 visitors the opportunity of seeing and appreciating the work of the greatest modern sculptor.

Through my work as Secretary of the Public Art League of the United States and intimate association with Richard Watson Gilder as President, my ambition had been fired with a desire to secure for the public the highest types of the Fine Arts produced by our artists, sculptors, painters and architects, so that our people might enjoy their beauty and be mentally ennobled by a growing appreciation of the Fine Arts.

I was in this frame of mind when the opportunity was offered of becoming Secretary of The American Institute of Architects. I accepted, enthused with the idea of combining the force of all believers in the elevation and refinement resulting from a knowledge of the Fine Arts. I felt that we could use the Association as a powerful machine, use it for the betterment of the architect, use it for the improvement of architecture, use it for the advancement of the Fine Arts, use it in the public service.

In 1900 this machinery was isolated in one plant. The time we felt had come for additional machinery and new branch plants under the central control. With care, thought and the strenuous work of many, the branch plants were established. We might compare the operating base to a great electric machine charged with dynamic force, connected by wires with all the states of the Union, with currents reaching across the ocean.

The superintendent in charge touched a button on one system and three hundred allied art societies, many patriotic, business and literary associations, responded in an output for the benefit of the public.

He touched a button on another branch when newspapers and magazines responded in editorials, descriptive articles and news items in favor of the Fine Arts.

He touched a button on yet another system and able, influental men from all sections of the United States gave of their time and capacity to the public service.

He sent a call from the central office when the thousand members of the Institute responded with vim and energy, upholding their ideals in art.

The operating plant, designed with love and zeal, upon a foundation of disinterested motives and high ideals for the public good, with justice and right for its footing, was erected on the bed-rock of public confidence.

The success of a plant is shown in the character of its output, and in the opinions of thoughtful men as to the value of its operations.

This Institute plant produced, without mentioning many minor products:

The purchase of the Octagon, giving the Association for the first time a fixed and national abiding place.

It stopped crude and destructive additions to the White House, which led to the charming restoration of this architectural monument and historic mansion by McKim, Mead & White.

It secured a Park Commission on the development of Washington, whose well-considered and important report has been a moral force in the growth of the Nation's Capital—and an inspiration to other cities and towns throughout the United States.

It secured a National Arts Commission which has proved its public worth by maintaining high ideals in sculpture, painting, landscape and architecture.

It secured the National Charter for the American Academy in Rome, placing this post-graduate school for our brightest young sculptors, painters and architects, to which it hoped to add musicians, on a par with the art schools of other countries.

It conferred the Gold Medal of the Institute on Ashton Webb, Charles F. McKim, Geo. B. Post, J. L. Pascal; making the presentations occasions for national and international tributes to the Fine Arts.

It organized and held the memorial meeting to Augustus Saint Gaudens, making it an international tribute to the greatest modern sculptor and giving hundreds of thousands the opportunity to view his works grouped together.

It placed competitions on an improved basis, so that the public have secured better results.

It prevented the location of the Agricultural Building where it would have destroyed the vista between the Capitol and the Washington Monument, and secured its location according to the Park plans.

It prevented the location of the Grant Memorial where it would have marred the charming view of the White House from the south and secured its location on the site recommended by the Park Commission.

It prevented the execution of crude designs for the office buildings of the House of Representatives and the U. S. Senate and additions to the U. S. Capitol, thus securing the dignified and effective Congressional office buildings designed by Carrére and Hastings.

It prevented the narrowing of the building line on the Mall to 600 feet, and secured through the Senate and Theodore Roosevelt a 900-foot park width, as designed by the Park Commission.

It prevented the location of the Lincoln Memorial, as an addendum to the railway station, as an entrance to the Soldiers' Home, as an attraction on Sixteenth Street hill, and its dissipation into an ordinary highway to Gettysburg, and secured its location after twelve years of effort on the site so wisely selected for it by the Park Commission where we see it nearing completion from the designs of Henry Bacon in all its simplicity and dignity as a part of the great composition in the development of the city.

It is interesting to know what other people think of our efforts and I am pleased to quote the opinion of a number of prominent men who were in position to judge of the results.

Thomas Nelson Page, author and ambassador:

"I have often wondered at the influence which the Washington office of the Institute had in public matters, though I could see well enough that it had been attained through the recognition on the part of the public of the unselfish devotion of the officers of the Institute to the public weal."

Robert Lincoln O'Brien, editor *Boston Herald;* ten years correspondent in Washington for Boston and other cities:

"I have always found that the Institute has possessed the confidence of the community through its advocacy of disinterested ideals for the advancement of the Fine Arts, and by reason of this confidence of the public the Institute's ideals to a surprisingly large extent materialized into realities.

"Its management must have been most efficient to secure these successes.

"It has had continuous opposition from some of the most astute politicians, but it has to a notable degree made its opinions prevail."

Francis E. Leupp, author, newspaper correspondent; resident of Washington for more than a quarter of a century:

"My memory goes back to a time when whoever had the ordering of a piece of work ordered it to suit his own fancy. **** The result of this confusion is nowhere more obvious than in the earlier growth of Washington **** due to its long lack of definite aim.

"To the Institute we owe the change in all this and the evolution of a plan which has received the commendation of experts of all nationalities. **** Its influence has radiated to all parts of the United States. **** In the country at large the capital was almost unknown except as a quiet place where the President lived and Congress held its sessions. Consequently with the adoption of Washington as the Institute's headquarters *** the tide of travel began to flow Washingtonward: the waking up of the city had attracted universal attention and the first inquiry of most visitors concerned the scheme of improvement they had been reading about in the newspapers.

"The significance of all this was soon made manifest in the attitude of Congress. **** From this

center, the Octagon, went out streams of influence which produced a new era in the appreciation of the Fine Arts all over the country. * * * * Public and domestic architecture made great strides * * * and the country became wholesomely critical where it had formerly been indifferent. * * * * The new impulse to artistic discrimination is traceable more to the Institute's work and the wise way in which it has been organized and managed than to any other cause."

Hon. Lynden Evans, member of Congress from Illinois, who successfully managed the fight on the floor of the House of Representatives which prevented the transfer of the appropriation for the Lincoln Memorial in Washington to a Gettysburg highway:

"I have just been putting away and classifying my papers and documents acquired during my service in Congress and I have much interest in preserving those relating to the Lincoln Memorial. I wish to express to you my appreciation as the one in charge on the floor of the House on its passage of the great work which the American Institute of Architects performed, and the country owes a debt of gratitude to you which will never be adequately appreciated until the Memorial is finished. Appreciation for such work is very often left unexpressed, and that moves me to say to you and your associates that I believe we could not have carried the Memorial without your aid."

James Bryce, M.O., Ambassador of Great Britain:

"My sympathy is so much engaged in your work that I have not liked to decline the labor. Best wishes for the success of your efforts."

Hon. Elihu Root:

"I have a high opinion of the usefulness of the Institute."

The vital fluid that gave life to the central plant of Institute operations was the unselfish zeal, business-like intelligence and personal magnetism of its officers and directorate.

The ramifying wires from central did not vibrate with life from card and filing systems, they responded to the fluid of personal zeal and mental force.

A superintendent, ignorant of the various functions, not comprehending the many adjustments, unfamiliar with the nicely fitted parts, not knowing the ramifications of the wires could easily scrap the plant and make worthless the whole operating base.

Having laid a solid foundation based upon public confidence, it would appear easy to erect a superstructure enlightening the public and ennobling the architect.

Is such a structure in progress with a fair prospect of fulfilling the ideals of the profession and the needs of the public?

From documents I receive from the Institute and from conversations I have had with architects I conclude few are optimistic. We hear of the lack of vision of officials, the commercial spirit of the layman, the aggressive spirit of the engineer and the managing zeal of the builder. It will at least be interesting and possibly profitable to analyze the reasons leading to this pessimism. This I propose to do in several articles, making an effort to discover whether the architect, the official, the engineer or the builder is to blame for this condition.

We know that when the architect executes his work efficiently the public is served by the product in buildings, bridges, monuments and landscape more effectively and advantageously than it can be served by any other profession or combination of professions.

Therefore, it is our duty as a profession to thoughtfully consider and fearlessly rectify any conditions touching toward the public losing the benefit attained by the service of the architect.

The Georgian House

With Special Reference to the House of J. Randolph Robinson, Esq., at Westbury, Long Island, Illustrated in This Issue

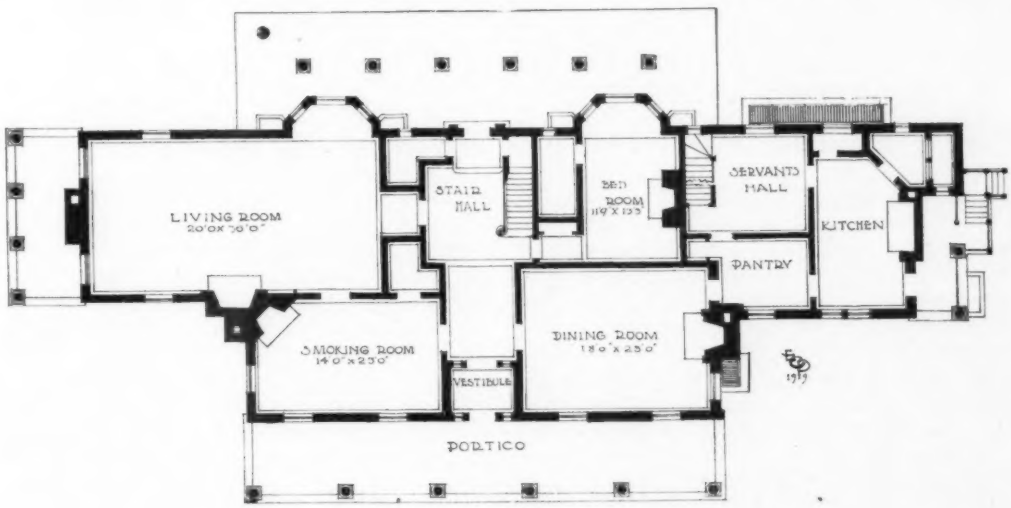
JOHN RUSSELL POPE, *Architect*

IN Burton's *Wit and Humor,* a book long out of print and becoming so rare as to attract collectors, a certain garrulous old lady, of the Mrs. Malaprop type, is said to have once asked Dean Swift if he would have "condiments" in his tea. To which the worthy Dean replied, "Pepper and salt, madam, but no mustard."

This anecdote suggesting a misuse of words reminds us of the misuse among laymen, and it is sad to record, of some architects, of the word, Colonial.

The main reason why people simply say "Colonial," when they mean Georgian, is perhaps that this correct and stately type is more closely identified with our Colonial history than any other.

The Georgian period of architecture in the Colonies saw the erection of many buildings that are of the highest historic interest and of the best architectural character. The names of many of these Georgian buildings will at once suggest themselves to the architectural reader as he will also recall the



MAIN FLOOR PLAN

HOUSE FOR J. RANDOLPH ROBINSON, WESTBURY, LONG ISLAND

JOHN RUSSELL POPE, *ARCHITECT*

As a rule, in applying this word to a type of architecture it is meant to describe the Georgian. So why not say Georgian, if that is what is meant. Or, if reference is had to the various and distinct types of architecture that marked our building during the Colonial period, give to each its proper prefix. For example, we have the Georgian, or English Colonial, along our Atlantic seaboard and on the shores of the James River. There is the Dutch Colonial in New York and nearby New Jersey; the French, the Spanish and the Swedish Colonial, each in those localities where groups of *emigres* from Europe at one time or another settled in our Colonies.

many fine examples of Early Georgian domestic architecture in this country. Undoubtedly, there is a certain refinement and suggestion of culture about the well-designed Georgian house, and it is equally true that in the development of design and the best exposition of the Georgian house no architects abroad have excelled the work of men in this country who competently have studied this type.

The house of Mr. J. Randolph Robinson, designed by John Russell Pope, and illustrated in this issue, presents a good example of the Georgian house of moderate cost.

In this country to-day even our rich men do not

belong to an idle class such as is perhaps common in Europe. Every man will have his business activities, those absorbing and often nerve-racking employments that make it necessary that at certain times he shall find a haven of rest, recreation and recuperation. It is this condition as surrounding a largely augmented class that is resulting in the creation in suburban locations of many small but at the same time dignified houses. It is easy to imagine the solace one might find among surroundings so well designed and carried to execution as is this house by Mr. Pope.

Inside and out there is to be seen reminiscence of the best expressed Georgian. The house is, as are all Georgian houses equally well designed, one to live in where contentment and those quiet hours so necessary to busy men and women may be enjoyed to the utmost.

There is a certain patriotism in the Georgian house. It suggests our early struggle for independence, it brings to mind the stirring scenes of our revolutionary period. Particularly is this true of the extant, well-preserved examples of this period. One may close one's eyes and with but little stretch of imagination people one of these old houses with the folk of the period. The candle-lighted rooms, the gleaming white panelled walls, the mahogany rich in contrast. Or, to the sound of music see the stately ladies in panniered gowns, with powdered hair and "patches," sedately walking through the measures of Sir Roger de Coverly, with the beau of the period.

Certainly the Georgian is a patriotic type. There may be differences of opinion among some as to whether or not it is the most desirable style for our country estates. Everyone may have his preference. We shall not quarrel with him, but if we may spend the end of a busy life in a Georgian house, embowered with elms, quiet, dignified, beautiful, we shall be happy, come what may.

Industrial Art Survey Inaugurated

THE National Society for Vocational Education reports that as a result of present conditions in the field of industrial art brought about by the war an industrial art survey has been determined upon by that organization under the direction of Prof. Chas. R. Richards of Cooper Union, to begin in January. It will cover the whole country and will be supplemented by studies of methods and results in European art schools.

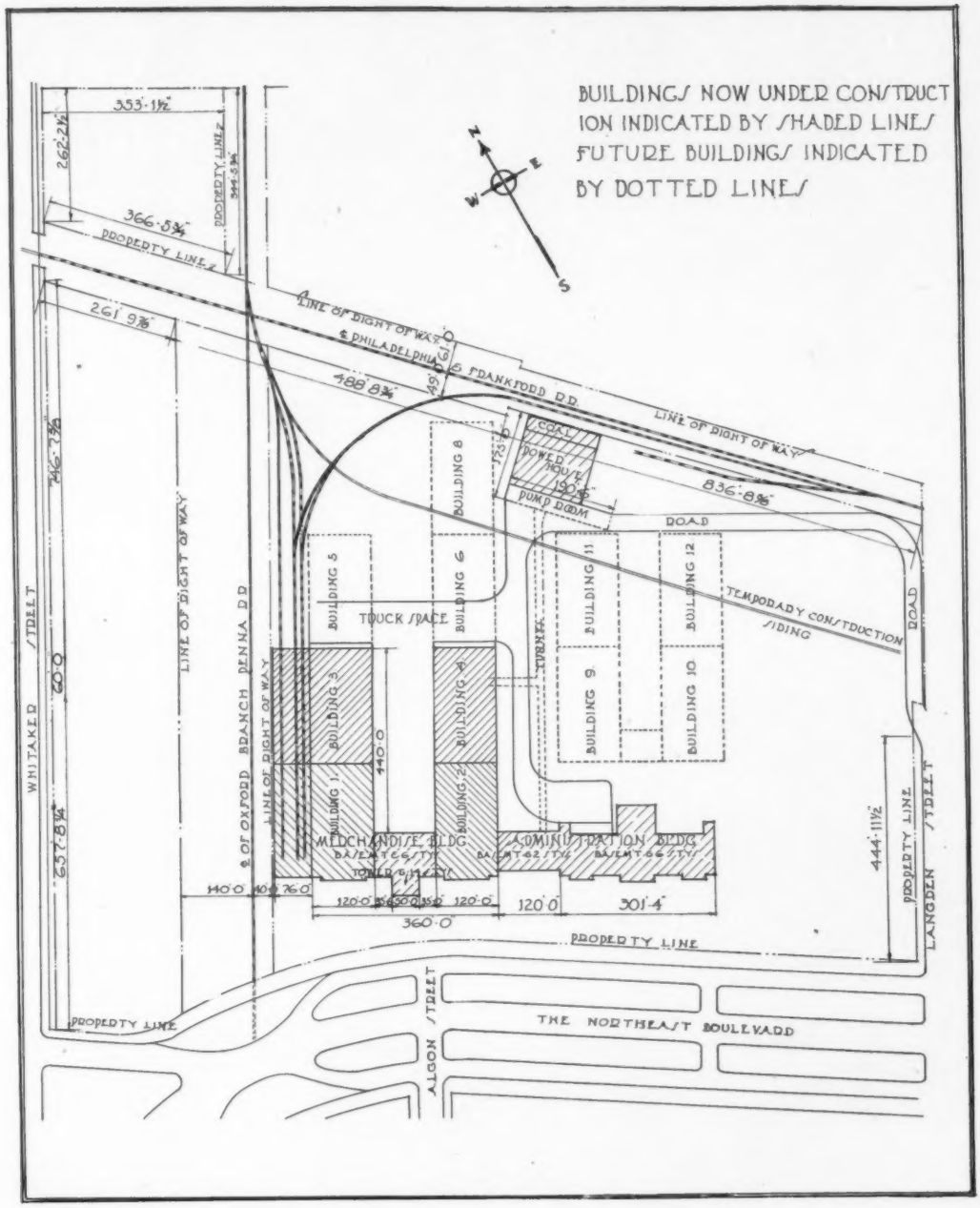
The purpose of the Survey will be to bring together the art schools and the manufacturers in a common program for the training of American designers.

The results of the European War have produced a profound effect upon the art industries of the United States, states the report. The borrowing and adaptation of designs, as well as the importation of great quantities of artistic merchandise, was practically brought to a standstill at the beginning of hostilities. Since that time American industries producing commodities into which the element of art enters in an important way have been forced to find in this country designers capable of developing the necessary ideas and motives. Some few establishments marked by unusual energy and breadth of vision have made extraordinary advances in artistic achievements and have rendered themselves independent of European assistance. The great majority of American employers, however, have not reached that point and are still greatly in need of trained designers.

The central feature of the survey will be a study of the conditions under which designs are developed for commercial practice, the requirements under which the designer works, and the qualities and training necessary for successful work in design. Among the industries to be studied are the costume trades, textiles, printing, jewelry, silverware, wall paper, lighting fixtures, ceramics, furniture and interior decoration.

An important feature will be an advisory committee of persons prominent in art industries who are counted upon to render material assistance in shaping the policies and scope of the survey. In addition, strong committees will be organized in each trade division to co-operate and advise as to the conduct of field studies.

A study will also be made of the extent to which American art schools are functioning in the training of designers for industries.



PLOT PLAN

PLANT OF SEARS, ROEBUCK & CO., PHILADELPHIA, PA.

GEORGE C. NIMMONS & CO., *ARCHITECTS*, MARTIN C. SCHWAB, CONSULTING MECHANICAL ENGINEER

The Philadelphia Plant of Sears, Roebuck & Co.

GEORGE C. NIMMONS & CO., *Architects*

THE product of an architectural organization is the plan, specification, the interpretation thereof and the supervision of construction. These are the essential directions to the contractor. The true function of this product is to direct the completion of a structure in a way that will make it adequate for the needs of occupancy. That is the essential. The cost and artistic appearance thus become of secondary importance. The needs of the occupant must be served first, that interest dominates and is not directly affected by factors other than utility.

The artistic design is that factor which principally affects the public and the adjoining properties. The importance and value of this element of the design is not to be overlooked and owners are becoming thoroughly appreciative of its value. It is assumed that an architectural organization is operated for a monetary profit as well as artistic achievement, both essential to a complete success. It then follows that the cost of the product is an important element to be considered. Many things affect this cost. The attitude of the organization toward the relative importance of the purely professional and the business phases of its practice influence the cost of production. To secure the proper balance between these two is one of the most important problems that confront the management of such an organization. It is known that such products of the finest quality, both artistic and utilitarian, are produced at a satisfactory cost and because of an efficient and well-balanced organization.

An interesting example of efficient architectural production is one recently accomplished by George C. Nimmons & Co. in planning the new Philadelphia plant for Sears, Roebuck & Co. It is true that Mr. Nimmons had the experience of planning the Chicago, Kansas City and Seattle plants for that company which was naturally an aid in the present instance.

The general requirements of the first units to be erected and their relation to the completed project were determined by consultation with the owners, and the 1/16-inch preliminary sketch plans agreed upon. The location of the plant on the Northeast Boulevard made it imperative that the structure be an artistic as well as a utilitarian success. That the first factor was properly taken care of is evidenced by the approval of the plans by the Philadelphia Art Jury before they were submitted to the city building department for permits to construct.

The buildings are located on a tract of land of about forty acres, which is located at the turn in the direction of the boulevard. This is a most advantageous location, as the structure appears to be at the apparent termination of the street. The location of the buildings under construction and the proposed future buildings is shown on the plat plan. The railroad tracks and adjoining streets are also shown. The buildings set back from the boulevard a distance of about 150 feet to allow for lawns and landscape effects, and at the same time adding to the apparent width of the boulevard at that place.

The mercantile building has a frontage of 360 feet, with a depth of 440 feet, nine stories and basement, except the tower of fourteen stories in height. The administration building has a frontage of 481 feet with depths of 75, 81 and 145 feet. The two-story and basement portion adjoining the merchandise building has a frontage of 120 feet, and the balance, with a frontage of 301 feet, is six stories and basement in height. In this two-story portion are located the kitchen, cafeterias and dining rooms for the employees and officers of the company, the balance being used for administrative and executive offices. In the tower of the merchandise building are located the water tanks for the sprinkler system and the house service. The power house is located at the rear, as shown on the plat plan.

The buildings under construction cover a ground area of 4.87 acres, the floors having an area of 48 acres. The buildings are of reinforced concrete construction, the walls faced with dark red brick of varying shades, with trim of gray-colored terra cotta. The architectural treatment is in a style that in recent years has been termed industrial gothic. The foregoing description and the illustrations give an indication of the extent and character of the work involved in the preparation of the plans. The mechanical equipment of the plant is designed by Martin C. Schwab, Consulting Engineer.

The order for the preparation of the working drawings, made in ink on tracing cloth, was given

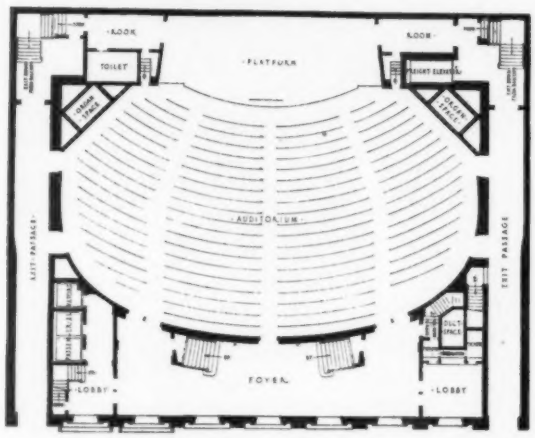
(*Concluded on page 13*)

PLANT OF SEARS, ROEBUCK & CO., PHILADELPHIA, PA.

GEORGE C. NIMMONS & CO., *ARCHITECTS*, MARTIN C. SCHWAB, CONSULTING MECHANICAL ENGINEER

The Civic Forum for New York City

AT the beginning of the settlement of America, 300 years ago, the first building which the founders of the Plymouth Colony set themselves to erect was a "Common House", as they called it: a place where they could meet to discuss, arrange and enjoy their communal life. The rough structure of logs suited the life of people who had come to live in a wilderness; not that it was intentionally so suited, but they built the best they knew. The building's service was from our point of view threefold: a church, a government house, and a social center for their community. The threefold usage became traditional, perhaps the first purely American architectural tradition, and one which still exists in its purity in our small villages.



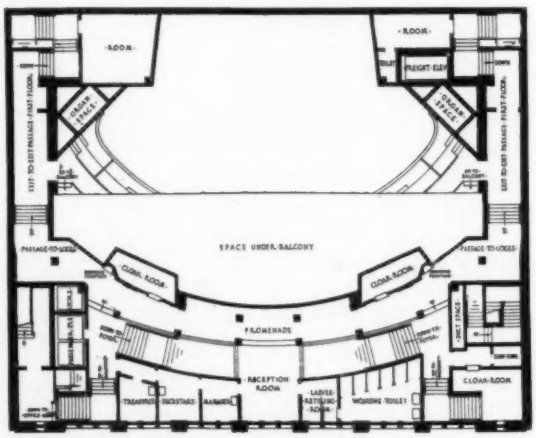
FIRST FLOOR

In the expanding communities with their complication of social life, the governmental function of the "Common House" was, for political reasons, removed to more impressive buildings; the religious function developed churches (in New England traditionally called "Meeting Houses"); and the social center completely disappeared so far as a traditional building is concerned, for the casual political discussion of the citizens seemed not to require a place of its own. It was carried on wherever men met informally. The population was small and everyone knew everyone else in the community, knew his life and what it stood for, knew what he thought with a knowledge kept up to date by constant association.

But soon, as a result of mechanical invention, our people began to move about the country, and while the dangers of parochialism were being obliterated in the very nick of time—though with not soon sufficient success as yet to avoid a Civil War—this ease of transportation brought new difficulties. Every community received from elsewhere in America or from Europe newcomers in increasing numbers who did not enter informally into active discussion of the community's affairs and these newcomers were thereby losing one of the qualities of our democracy.

One day each year all men were equal at the ballot box. Yet there must have been a vague apprehension that there was somewhere a social lack. Perhaps that is why the "lyceum" appeared at that time. But the "lyceum," after starting as an ethical movement, became literary and transcendental rather than practical, and there gradually came throughout that period a decadence of general interest in politics. Eventually the lycea were transformed into theatres and libraries.

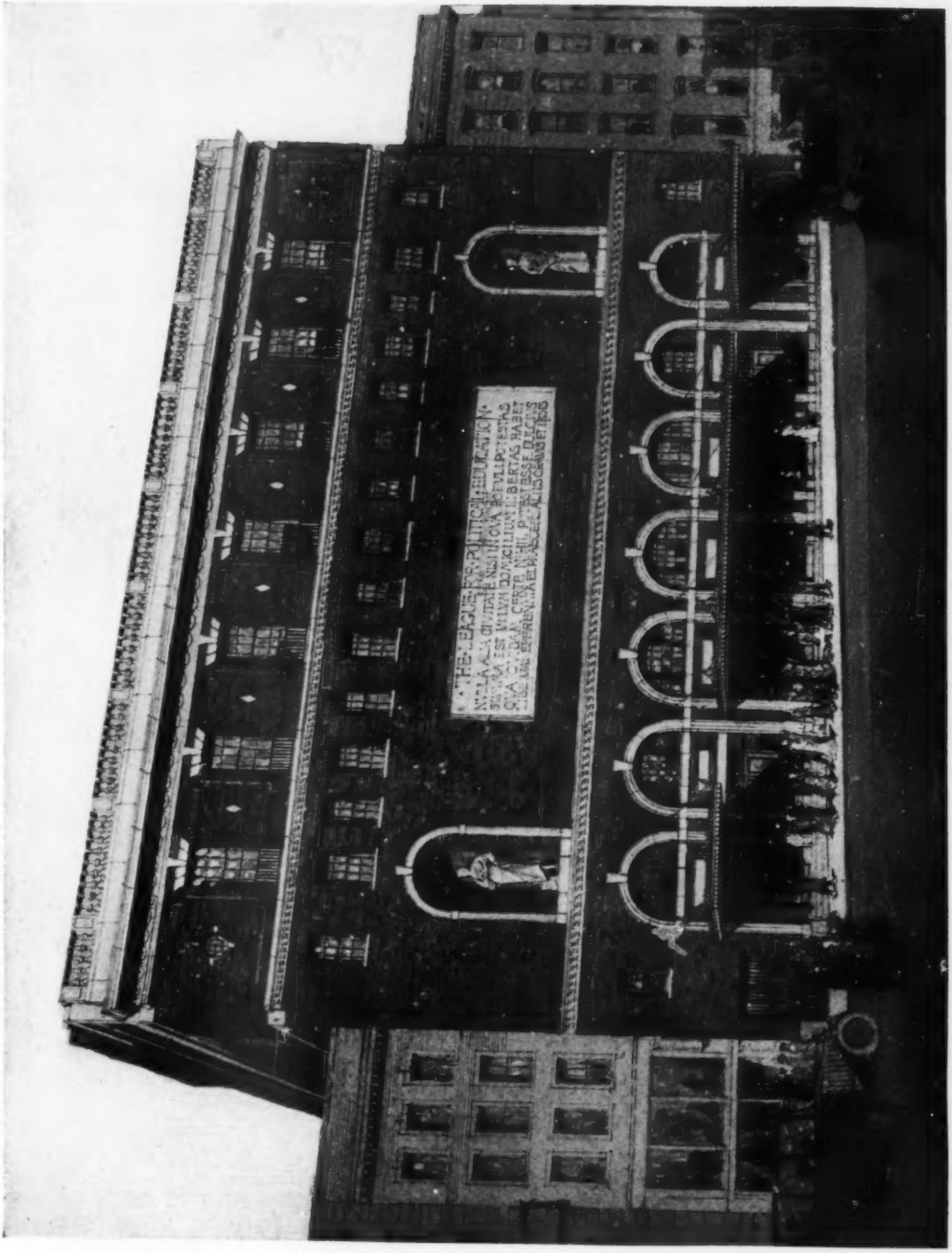
Continuously in response to increasing economic demand the people came and worked and lived. We talk of a "melting pot" but there was no "melting pot." Economically the newcomers were absorbed; they gave their labor and received their pay; but politically they existed only in the scheme of some professional politician as did most of the rest of our people—and the incoming Europeans knew nothing better. There was no special machinery for knitting these people together or introducing them into our communities and thanks are



FIRST MEZZANINE FLOOR

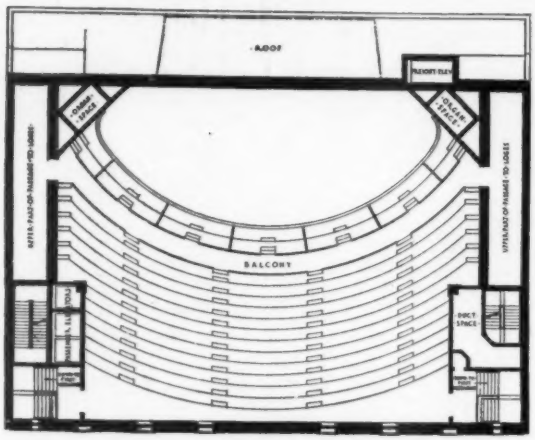
due to our system of free education that we are not much worse off than we are.

Of late we have tried settlement houses and



HALL FOR THE LEAGUE OF POLITICAL EDUCATION, NEW YORK
McKIM, MEAD & WHITE, *ARCHITECTS*

night schools. While these may be very well in their way, they are beside the point. They educate but they do not amalgamate. They are not democratic. It becomes increasingly evident that our



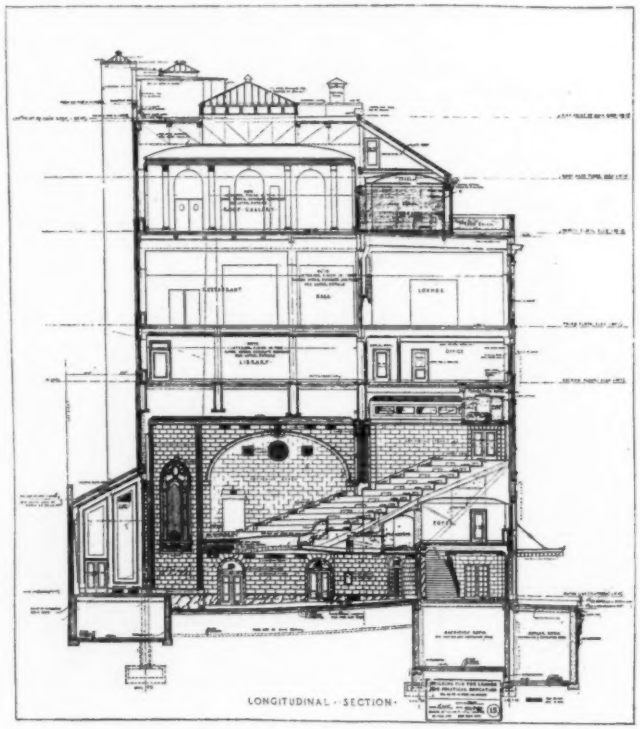
BALCONY FLOOR

social structure has developed and is developing the conscious need of buildings which shall be consecrated to the informal civil life of all its members. We are all interested in our politics today and are beginning to realize that they are an every-day affair and not a business to be disposed of once and for all by primaries and elections. We may be a little excited by the discovery and we may talk of the danger of revolutions and anarchy. But there are no dangers except the one that part of our people shall not know what some other part is talking about, for we speak in many languages of ideas remote and not yet related. It is a simple necessity that these be brought together, understood and related; to accomplish this is our obvious duty. The buildings in which this knitting together takes place will be lasting monuments to our purpose. In such buildings we shall talk things over quietly and at ease. What we don't want, we will discard; what we need, we will keep for legislation.

Elaborate capitols marked but one phase of our understanding of the system by which we are governed. More modest structures will represent the realization that this is not only a government "for the people" but "by the people." Our radicals may romantically call this a revolution in our government if they choose—but it isn't. The revolution was in 1620 or 1776.

One way our people mean to express this understanding of their responsibility for their government—and this now seems to be one of the most distinctive features of the period of political consciousness now dawning—is through what has been popularly known for the past ten years as the "civic forum". The "civic forum" is not a new or radical notion, it is not revolutionary, but is rather an institution founded on what undoubtedly is one of the earliest traditions of our society: freedom of speech at a proper time and place. Ten years ago the traditional open meeting received strong impetus and nowadays there are thousands of such meetings being held in churches or within the confined areas of school houses. The movement has become so developed that its housing needs are becoming more clearly defined. In the issue of THE AMERICAN ARCHITECT for October 7th there were published plans for civic centers which meet the demands of the towns and smaller cities. The illustrations accompanying this article present the means by which architects propose to meet the situation in New York.

The League of Political Education in that city,



LONGITUDINAL SECTION

as a part of its effort toward developing our political standards, has decided to build an auditorium "where law-abiding citizens may get together and really have a chance to discuss their common interests." They have placed the problem of expressing the idea in a building into the hands of McKim, Mead & White.

Ease of access for the city's population is an essential of such a building. The site in New York is accordingly on Forty-third Street between Sixth and Seventh Avenues, within a block of Times Square—the center of the city's transportation system.

The first four floors of the building are to be an auditorium appropriate to serious public meetings, with walls of artificial stone in soft, warm colors and with a small platform under a simple proscenium arch. There is to be one balcony but no boxes, the room seating in all about 1,700 people. There are wide aisles and comfortable seats but no posts or supports to obstruct the view. The lighting is indirect. The swinging doors at the beginning of each aisle are calculated to attain quiet and repose. The general feeling of the room approaches the Greek in its simplicity.

The floor above, which corresponds to a fifth floor, will be used for the offices of the donors—the League of Political Education—and its allied organizations: the Civic Forum and the Economic Club. On this floor there is also to be space for a library to contain 10,000 books. The sixth floor and the galleries on the roof are to be arranged as quarters for a proposed social club of men and women.

Mr. Theodore Roosevelt, Jr., laid the cornerstone of this new civic auditorium on January 24th, and it is expected that the building will commence its important work of public service during the coming summer.

The Philadephia Plant of Sears, Roebuck & Co.

(*Continued from page* 8)

on August 25, 1919, and they were completed, ready for estimates, on September 16. This covers a period of twenty-three days, which included three Sundays and one holiday, Labor Day. There were nineteen working days consumed in the preparation of the complete scale drawings and specifications.

Such a production would be impossible in a vast majority of architectural organizations. It can only be accomplished in an organization that is properly balanced in all its parts and which is animated with a certain *esprit de corps,* which is necessary for such achievements as this. A banquet and theatre party was given to all the members of the organization to celebrate the success of the undertaking.

Alliance Between Industry and Education

THE Massachusetts Institute of Technology, Cambridge, Mass., is just beginning to approach the industries of the country with a plan of co-operation which, while it has for its immediate objective the raising of funds to provide more nearly adequate salaries for the members of its instructing staff, is not only almost revolutionary in character, but is bound to have far-reaching effects on the educational and industrial structure of the nation.

Briefly stated, the Technology Plan of Education, as it is called, consists in the various industries retaining the Institute in a consultant capacity, on an annual salary basis. In return for the fee, Technology agrees to permit the corporations so retaining her to make use of the Institute's extensive library, files and plant, and to consult with the members of her staff and faculty on problems pertaining immediately to the business of the company. In addition, the Institute will place at the disposal of these industries a record of the qualifications, experiences and special knowledge of her Alumni which is likely to be of value to them, will advise and assist the various companies in obtaining information as to where special knowledge and experience in any given subject may be obtained, and will give them the first opportunity of securing the services of "Tech" men.

Like many another idea, humble in its beginnings, the Technology Plan may run to lengths far beyond its original scope. It is a perfectly logical conclusion, for instance, that ultimately Technology would be retained by the majority of larger corporations just as they now retain great lawyers or great engineers. In return for the retainer fee, they would receive the potential value of the name and reputation of the Institute with its great plant and laboratories, its library—one of the most famous of its kind in the country—the services of its instructing staff and the benefit of the advice of the experts in various fields of engineering who are among its Alumni. In thesis work investigations by undergraduates, preference would be given problems which confronted the corporations and concerns that retained the Institute.

Carried to its conclusion, the Technology Plan would make of M. I. T. the greatest consulting body in the world, since its range would cover

practically every field of technical research and it would follow that since the great corporations of the country retained Technology as a consultant, the great experts of the country would ultimately be members of its instructing staff. In other words, Industry would, in a sense, come to Technology, instead of the instructing staff and students going to Industry as they do now in certain cases.

It is, therefore, quite likely that a new relationship between Technology and the industrial organization of the country will grow out of the Technology Plan. American industry has long been in need of a clearing house of scientific knowledge. The unparalleled resources of M. I. T. are to be placed more than ever at the command of the nation's business, and what the step will mean for the development of American enterprises in every field of endeavor can scarcely be overestimated. The position the United States is to hold in the commerce of the world will depend in a large measure upon the degree to which science is applied to the process of production and it is the technically trained man who will meet and solve the problems of international competition.

Fears that the Technology Plan may conflict with the work of the private consulting engineer are answered by the obvious fact that the great majority of the problems submitted to the Institute are beyond the scope of the private engineer or laboratory.

A Secret of Bad Building

A CORRESPONDENT of *The Times* of London, says: "Anyone who has been engaged in drawing and measuring a mansion, say of the seventeenth or eighteenth century, must have been struck by the opulent scale and proportion of its details as compared with the most costly building of the same class erected in the present day. Yet the difference may be traced rather to a system than to any conscious intention on the part of architects, builders, and clients. In a word, the present-day building is erected 'by contract'; the seventeenth-century building was not.

"Where first the idea took possession of the mind of the building owner that he must know the exact cost of his building in advance and obtain a legal contract for the carrying out of it for a specified sum, the building contractor, of course, for the protection of his own pocket, must know exactly what amount of each material used in the building he had to supply; hence arose the operation called 'taking out the quantities.' In the first instance this quantity-taking was done by the builder at his own cost, as a means of self-protection. But the time came when the builders, as a class, rebelled against this tax on their time, and required the 'quantities' to be supplied to them at the cost of the building owner. Hence arose the separate profession of the 'Quantity Surveyor.' Now on top of all this comes the desire of the building owner to get his building as cheap as possible; so the quantities are supplied to a selected number of builders, who are invited to state respectively for what sum they will carry out the building, and (unless there has been a special *caveat*—'the lowest tender not necessarily accepted') he who will do it cheapest is selected, with the result sometimes that the selected builder leaves himself so narrow a margin for profit as to be under a painful temptation to scamp the workmanship in some way not too obvious to the eagle eye of the architect.

"Thus architecture, which should be a great and noble art for the embellishment and pride of cities, and carried out with that object pre-eminently, is reduced to a kind of business of getting a presentable result at the least possible cost, and in general, it may be added, in the shortest possible time, for in too many cases (in town architecture especially) a new building is regarded by its promoters not as architecture but simply as 'property'; on which money has been expended, and which must be hurried up in order to make money returns out of it as early as possible. An essentially commercial generation may argue that this is the only logical, reasonable, and business-like method of procedure. It may be business, but it is not architecture. Not on such a system will arise such a civic architecture as will leave 'no complaining in our streets.' No great architecture ever has been or ever will be produced on the basis of building as fast and as cheaply as possible."

To the foregoing, printed in *The Architect*, of London, the editors add the following note:

With much of this, many builders and most architects will be in complete agreement; but the unduly heavy scantlings used in the seventeenth and eighteenth centuries were consequent on a very rudimentary knowledge of stresses.

EDITORIAL

In order to supply our readers with material of current interest, the news and comment appearing in issues of THE AMERICAN ARCHITECT delayed by the printers' strike will be as of actual rather than stated date of publication.

The Architect and Public Service

"NO profession has a right to existence unless it serves the people." Thus writes Glenn Brown in the opening sentence of his series on "The Architect and Public Service" printed in this issue. While this contention is not new, it is particularly important at this time that it receive the emphasis of repetition.

It is unfortunately true that in certain ranks of professionalism this important fact has been lost sight of and professional service has very largely degenerated into a selfish forwarding of the professional advancement regardless of the public welfare. Just whether or not these conditions exist in the profession of architecture will be left for Mr. Brown to make clear in his articles. Certainly, by reason of long and faithful service to the profession and by the high rank he has attained among architects, no man is more competent than he to discuss the subject.

MR. BROWN will consider the contributory causes which during later years have resulted in largely bringing about a very decided change in professionalism. He will not claim to have first discovered that the profession of architecture, in common with other professions, has been traveling strange and devious paths. That knowledge has been brought home to professional men in all ranks throughout the country and has resulted in an inter-professional conference recently held in Detroit which will undoubtedly be the means of effecting some very necessary reforms.

Just how far and how valuably the profession of architecture may serve the public has been made very plain by Mr. Brown in his series recently printed in this journal, "Roosevelt and the Fine Arts." So thoroughly was organized architecture serving the public that it had no difficulty in securing the indorsement and support of a National Administration in carrying forward its well-formed ideals for the architectural advancement of this country. Does the present attitude of organized architecture command in equal measure that same support and is it doing anything to earn it?

Those who indignantly repel the statement that architecture is in any sense a business, who stoutly claim it is all an art, will need to mold their actions on the lines of those whose influence and abilities at one time put architecture on the highest artistic plane it has ever occupied in this country.

We have much to learn in the profession of architecture as to just what it means to serve the public. It is believed that Mr. Brown's series will very thoroughly point out the only road on which we may safely travel.

Organizing for Efficiency

DURING the progress of the war comment was many times made in these pages as to specific instances where architects' offices had in unusually short periods of time prepared the plans and specifications for large and often complicated buildings. These references were made with a view to demonstrating that in all architectural offices sufficiently large to handle big operations, the organization had been and was then so very well maintained that no sudden influx of business, no unusual demand, could disarrange their smooth functioning.

In this issue there is illustrated, with an accompanying brief article of description, the Philadelphia plant of a large Chicago corporation, designed by George C. Nimmons & Co.

We note that from the placing of the commission by the client to the delivery of the plans and specifications by the architect there elapsed a period of but nineteen working days. Reference to the drawings and illustrations will enable the technical reader to understand just what was accomplished in this brief period.

We believe it will be conceded that nowhere in the world could a better record be made, and we further believe that this combination of speed and efficiency is now generally recognized as a dominating characteristic of a result when American architects and engineers unite to produce that result.

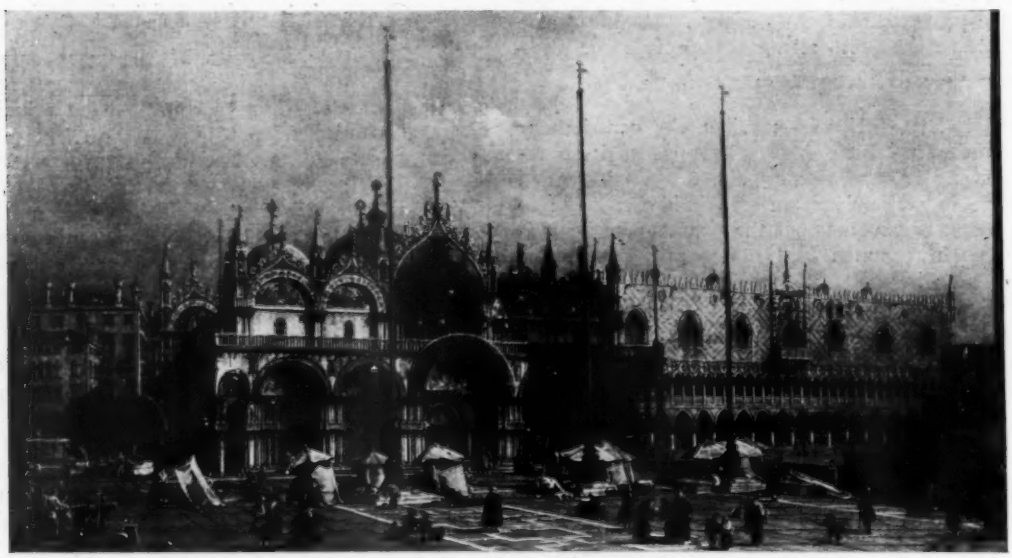
The Inter-Professional Relation

THE importance of engineering, structural and mechanical elements in building construction is becoming more pronounced with each passing day. How best to co-ordinate the engineering with the many other elements of architecture, in producing plans and specifications, is a problem that demands the serious thought of architects at this time. As the magnitude of building projects becomes greater with the multiplicity of details, this demand will become more insistent.

That engineering and architectural designing are of relatively equal importance in the practice of architecture, is very clearly established in the article by Mr. Yardley printed in this issue of THE AMERICAN ARCHITECT. He also suggests a way in which the co-ordination of these things is successfully accomplished and in addition outlines the training and qualities necessary to produce an architectural engineer. In discussing such an engineer he clearly defines his duties and responsibilities and makes it patent to the reader that the technical curriculum of the day is lacking. This is probably due to lack of appreciation of the need for this particular training on the part of technical educators. The educational effort has apparently been concentrated on training specialists. These specialists are necessary, but the need of the more broadly trained architectural engineer is as great. The recent discussions concerning a broader training of architects and engineers in general cultural topics has borne fruit and men of these professions are aware of the needs.

Owing to the vast number of engineering factors entering into building construction, greater in extent than in any other construction work, the architectural engineer, who is responsible for all of them, must have the broadest and most liberal technical training and in addition thereto a comprehensive cultural training. The road which leads to competency is a most arduous one and it should not be entered upon lightly. There should be some method by which students not qualified for this work might be prevented from engaging in the study. This is a thing that must be worked out by each technical school as best it can. This is one of the most vital matters that concerns the educator to-day.

When the Post-War Committee considers the question of scholastic training for architects it can very profitably consider also the training of architectural engineers. Their work is so allied that the consideration of the first alone would be most unfortunate.



CATHEDRAL OF ST. MARK'S, VENICE
FROM THE PAINTING BY CANALETTO
(Courtesy of M. Knoedler & Co.)

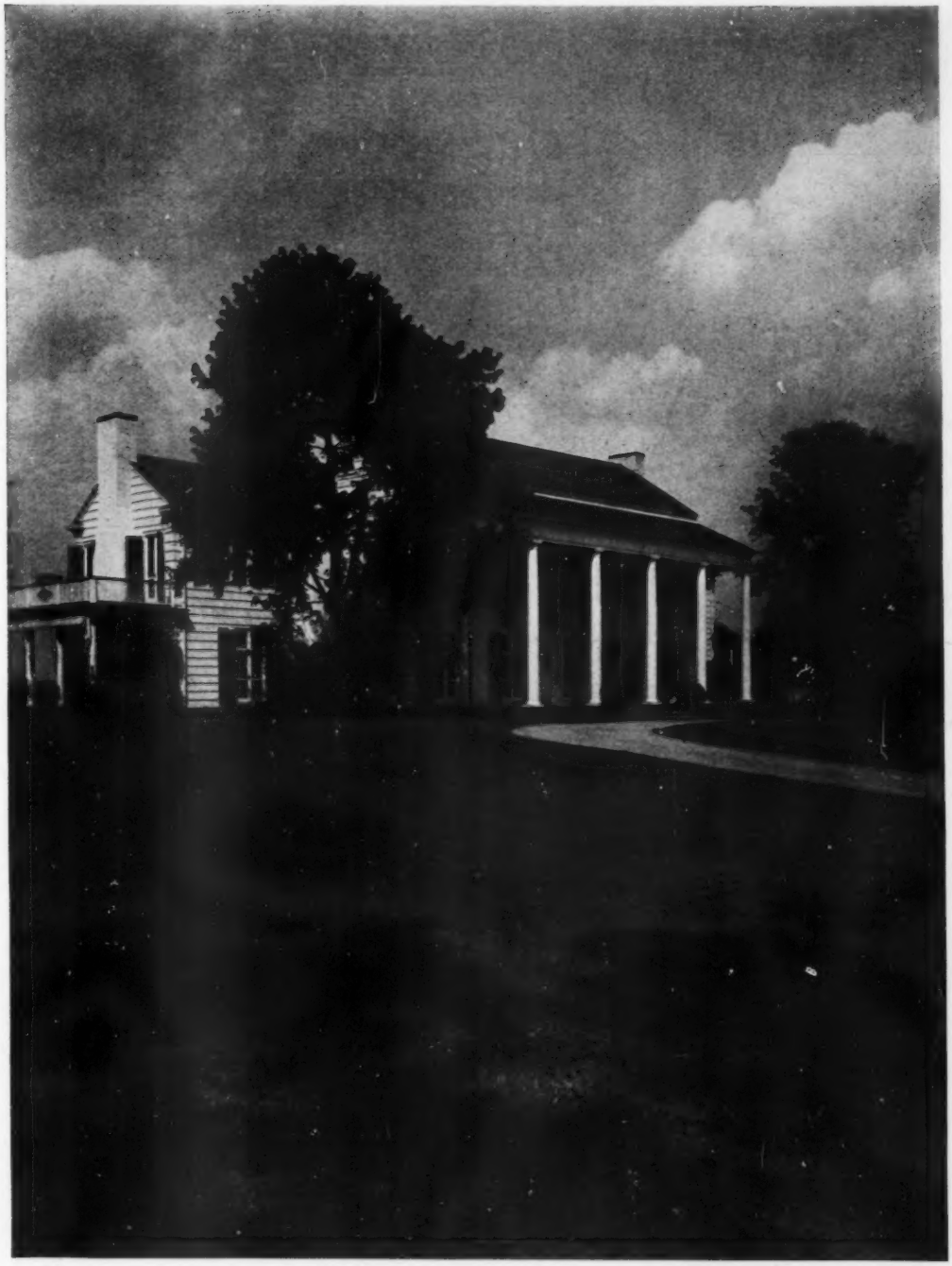


PLATE 1 HOUSE OF J. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND

JOHN RUSSELL POPE, *ARCHITECT*

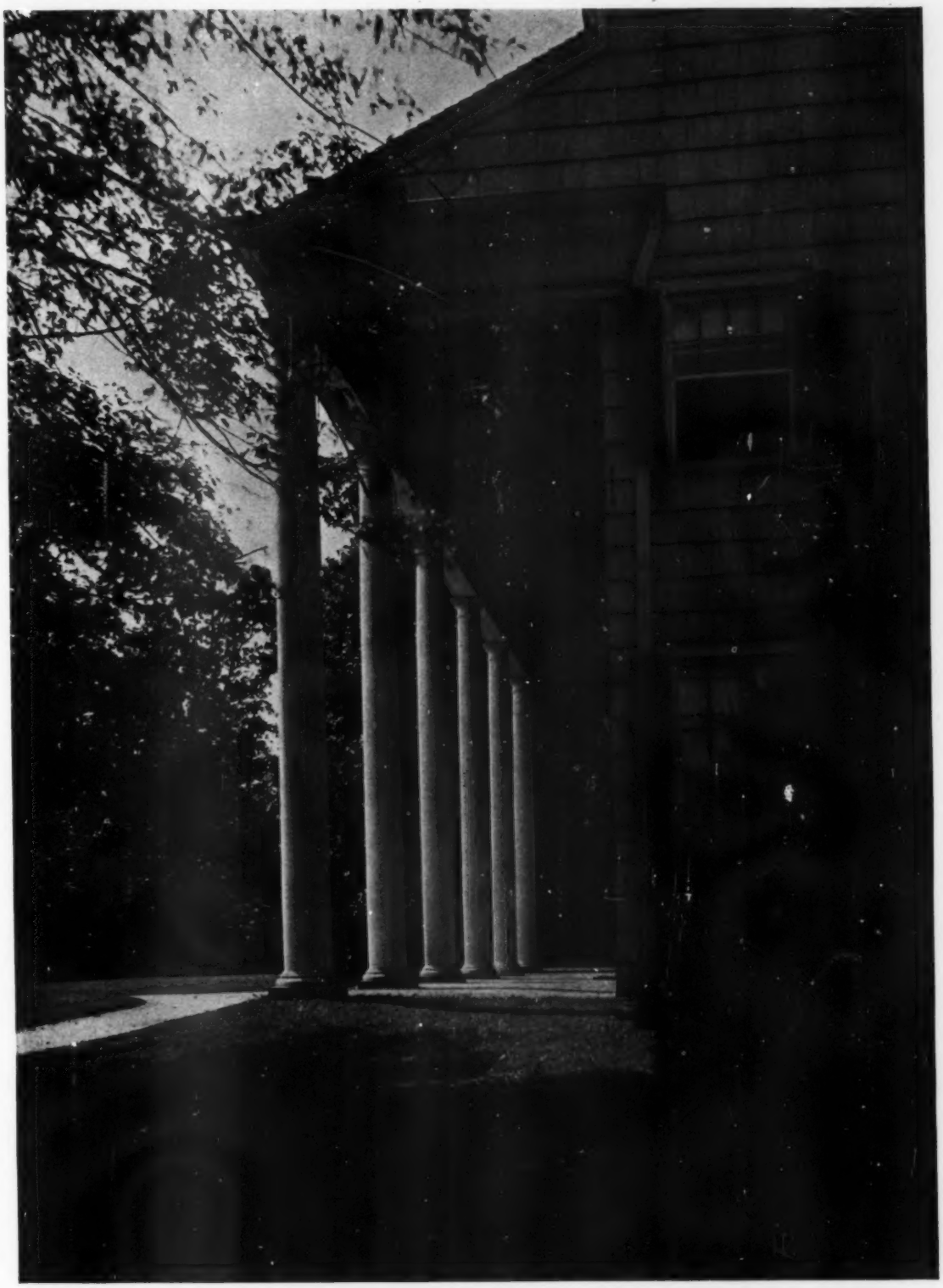


PLATE 2 HOUSE OF I. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND
JOHN RUSSELL POPE, *ARCHITECT*

PLATE 3

HOUSE OF J. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 4 HOUSE OF J. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND

JOHN RUSSELL POPE, *ARCHITECT*

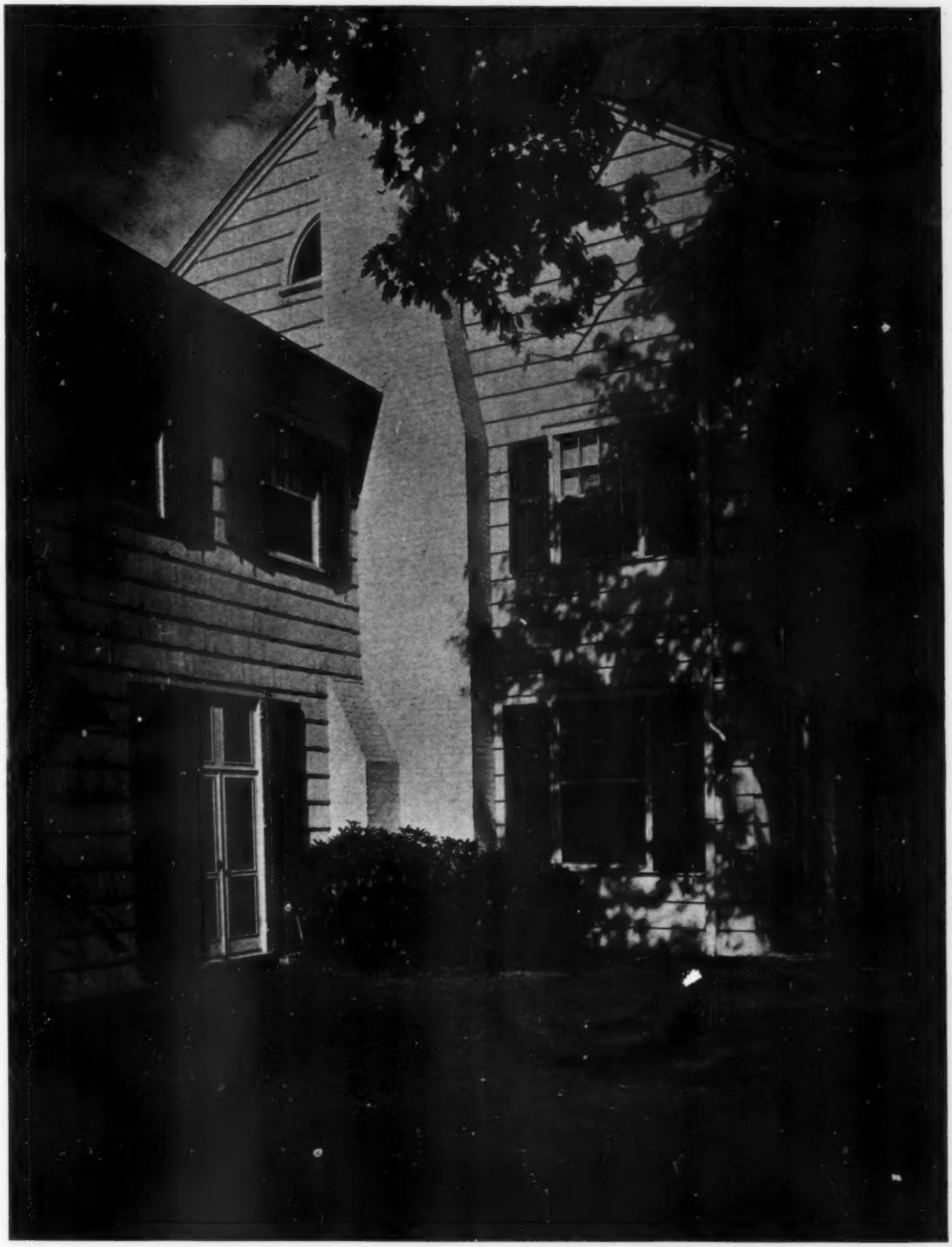


PLATE 5 HOUSE OF J. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 6 HOUSE OF J. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 7 HOUSE OF J. RANDOLPH ROBINSON AT WESTBURY, LONG ISLAND
JOHN RUSSELL POPE, *ARCHITECT*

Current News

Happenings and Comment in the Fields of Architecture and the Allied Arts

In order to supply our readers with material of current interest, the news and comment appearing in issues of THE AMERICAN ARCHITECT delayed by the printers' strike will be as of actual rather than stated date of publication.

Brooklyn Chapter to Make Special Awards

The Brooklyn Chapter of the American Institute of Architects passed a resolution at a meeting of the Chapter held to give a certificate of merit to the owners and architects responsible for the best designs in the construction of buildings, store fronts and architectural operations constructed during the year 1919 and every year thereafter.

The Chapter is doing this to stimulate artistic designing for buildings throughout the borough and, knowing that the profession has suffered considerably during the war, believes that this is the best way possible to arouse more interest among the architects of Brooklyn.

A committee of three members of the Chapter appointed by the president will inspect and report on the artistic qualifications and merits of the buildings and designs and report their findings to the Chapter as a whole.

The certificate of merit will be given in recognition of Brooklyn Chapter members for work done. Any member of other Chapters may receive a certificate of merit on the same basis and conditions as the Brooklyn Chapter members. By unanimous vote of the Brooklyn Chapter any other architect may be awarded a certificate of merit for meritorious and artistic building operations in Brooklyn.

Every certificate of merit is to be given without prejudice and strictly on the artistic merits of the design, proportions and general results.

National Federation of Construction Industries Presents Plea to Congress

To the Senate and House of Representatives of the United States of America, in Congress Assembled:

Your petitioners respectfully represent that they are an association of persons and national and local organizations concerned as manufacturers or contractors or otherwise in the building or construction industry of the United States.

That the present condition of shortage in building and structures has been largely brought about through the curtailment of the construction industry by the Government during the war.

That the tendency of the Federal Reserve System, admirable in its general effect upon the business of the country, has been to promote the use of capital upon short term loans, made through national and other banks.

That the attraction of capital to such loans has drawn capital away from long term loans based upon mortgage on real estate.

That the erection of the required dwellings and manufacturing buildings, by increasing the plant facilities of the United States, will tend to increase production and decrease prices.

That there is a need at the present time in the United States for from 600,000 to 1,000,000 new dwellings as homes for workmen and others and of many other buildings for business and other purposes, which constitute cumulated requirements caused by the nearly complete cessation during the war of building for other than war purposes.

That the preference created by the Federal Reserve Law for the investment of capital in commercial discounts and other like forms of investment has resulted in withdrawing large sums of money from availability for loans on building and real estate, and has thus greatly hindered the construction industry and increased the difficulty attendant upon the restoration of normal conditions in the construction industry.

After careful consideration of the situation, as above outlined, the National Federation of Construction Industries is convinced that a comprehensive study should be made of: The sources of capital available for home and other building purposes, the recent withdrawal of capital from long term mortgages on real estate, the causes of such action, the unfortunate results to the construction industry and to those who desire to own and occupy buildings for production or for dwelling purposes, and the possibility of legislative correction of the evils unintentionally created by otherwise beneficial legislative action.

The National Federation of Construction Industries therefore respectfully memorializes the Congress of the United States that a subcommittee of the Committee on Banking and Currency of the Senate and Ways and Means of the House of Representatives, or a joint committee of both Houses of Congress, be appointed to make an investigation of the matters above outlined, to the end that there may be developed a modern system of long term banking, complementing, but not conflicting with, the Federal Reserve System, so that the nation's wealth may be more completely mobilized both for times of peace and for times of emergency, and so that national development may be promoted during the period of reconstruction.

ERNEST T. TRIGG, President.

The American Association of Engineers on Trade-Unionism

In the present state of industrial unrest the board of directors of the American Association of Engineers has considered it desirable to make a statement defining the position of the Association. This statement follows:

The American Association of Engineers is an incorporated organization responsible for its acts.

The engineer is the medium through which both capital and labor are used in production and in industrial development. The aim of the profession is to advance civilization and render the highest service to society. Except when their acts further this aim, it is an advocate of neither capital nor labor.

Production should be increased—not limited. The profession cannot support strikes or lockouts or any other methods that may benefit any class at the expense of the nation as a whole. They are unsound and must inevitably lead to economic disaster. The law for supply and demand for men or material must ultimately prevail. Attempts may be made to limit the supply of either, but looking toward the upbuilding of civilization we believe rather in increasing the demand through the promotion of legitimate enterprises.

Rewards should be according to ability, initiative and constructive effort. Men are not equal in these respects. Each man should be encouraged to do his utmost and be given compensation according to ability and will to increase production and to achieve large results.

The engineer, as an educated professional man, believes in basing his claims for proper and just reward for his services upon the justice of the facts presented, upon enlightenment of public opinion, upon loyalty between employer and employee, and upon the underlying fundamental desire of the great majority to do what is fair and right when the merits of the case in question are clearly presented and demonstrated. We believe in organized representation for the correction of wrong, the advancement of the profession and service to the public, but are opposed to methods inconsistent with the dignity of the profession and which would lessen public confidence.

Famous Chateau of Louis the 15th Damaged by Fire

The famous and magnificent chateau built by Louis the Fifteenth at Compiegne has been damaged by fire. During the war this great pile had been turned to many uses. Those who knew it when Foch was installed in a neighboring building, will recall the curious spectacle of the interior, where many of the services of general headquarters were quartered. Fortunately, few of the art treasures had been put back in places in the part of the chateau which has most suffered. It is mainly masses of records of the ministry of reconstruction which have been destroyed. Nevertheless the damage is estimated at more than two million francs.

The fire started on the first story of the chateau and soon spread to the second floor, where it gutted two of the finest rooms in the palace, the Salle Du Conseil and the Emperor's (Napoleon III) room.

There was a fine ceiling in the Emperor's room by Girodet, representing the figures of war, force, justice and eloquence. This has been destroyed, as have the wall paintings and fine woodwork which decorated the Salle Du Conseil has also been burnt out, but fortunately the flames were stopped before they reached the Emperor's library, which has even a finer ceiling by Girodet. The roof and interior of the left wing has been very largely destroyed.

Building Material Exhibition at Christiania

A cablegram from Consul General Marion Letcher at Christiania, Norway, states that there will be a building material exhibition from April 19 to May 3 at Christiania held under the auspices of the Norwegian Housing and Town Planning Association. Among the materials to be shown are those necessary in erecting residences, such as ceiling and wall materials, flooring, tiling for interiors and for roofs, heating and sanitary equipment of all kinds, electrical equipment for heating and for domestic power. Ready made buildings will also be exhibited.

American concerns are invited to take part and invitations have been issued to the manufacturers of other countries.

Applications for space may be sent to the American consul general at Christiania to be transmitted to the proper authorities, but the consul general cannot assume any responsibility for obtaining such space. The space is limited. The rate of exhibitors, payable in advance, is 55 crowns for each square meter, but a refund will be made if any funds remain at the close of the exhibit. No space may be secured after Feb. 15. The allotments of space is in the hands of the committee, both as to the amount of space and the location.

Fire Losses in the United States and Canada

The *Journal of Commerce* (New York) prints the following table of fire losses in the United States and Canada by years since 1879:

1919	$269,000,775	1898	$119,650,500
1918	317,014,385	1897	110,319,650
1917	267,273,140	1896	115,655,500
1916	231,442,995	1895	129,835,700
1915	182,836,200	1894	128,246,400
1914	235,591,350	1993	156,445,875
1913	224,728,350	1892	151,516,000
1912	225,320,900	1891	143,764,000
1911	234,337,250	1890	108,893,700
1910	234,470,650	1889	123,046,800
1909	203,649,200	1888	110,885,600
1908	238,562,250	1887	120,283,000
1907	215,671,250	1886	104,924,700
1906	459,710,000	1885	102,818,700
1905	175,193,800	1884	110,108,600
1904	252,554,050	1883	110,149,000
1003	156,195,700	1882	84,505,000
1902	149,260,850	1881	81,280,000
1901	164,347,450	1880	74,643,400
1900	163,362,250	1879	77,703,700
1899	136,773,200		

Total for 41 years.....$7,031,966,820

The losses for December were $27,366,500, to be compared with $41,737,750 for December, 1918, and $26,360,300 for December, 1917.

A Special Exhibition of Reproductions Selected by a Jury of Experts

That any great organization should undertake a country-wide campaign under the slogan "Art in Every Home" is a novelty in American life. Yet under this significant motto The American Federation of Arts, a national organization with 225 chapters (some of which number as many as 800 members), and thousands of individual members in all parts of the country, has grouped a series of efforts for the improvement of American home furnishings. It has just announced an exhibition of prints in color and photographs suitable for home decoration. The prints in question have been selected by a jury of experts. Every taste and fancy of the individual may be satisfied in this exhibition: history, mythology, chivalry, love, the home, childhood, music, patriotism, nature in all forms, figure landscape and sea subjects, in fact subjects eminent-

ly suitable for any home are there, and at a figure within reach of every purse. Some 300 subjects will be shown, the great majority of them being by American artists. There will also be a small group of foreign subjects, as well as a number of reproductions of famous paintings by old masters.

There is also an exceptionally good series of photographs, among them a selection from paintings in the Metropolitan Museum of Art, published by the museum as part of its extensive educational work.

The exhibition will be held at the Sage Foundation Building, 130 East Twenty-second Street, Jan. 11 to 25. There will be no charge for admission.

This exhibition will form one of a number sent on tour throughout the country by The American Federation of Arts, thirty exhibitions of paintings, prints, crafts, war memorials, architecture, etc., etc., being on the road all the time, each being shown in a different city each month, thus reaching some 360 cities each year.

The present exhibition of prints for home decoration is the first step in a country-wide campaign which will ultimately embrace many other aspects of home decoration, such as textiles, pottery, etc.

Bridgeport Chamber Attacks Some Nuisance

The Smoke Abatement Commission of the Bridgeport Chamber of Commerce sent the following letter to the major coal users in Bridgeport in an effort not only to solve the smoke problem, but to relieve the shortage of fuel.

DEAR SIR:

As a big user of coal you have a primary interest in smoke abatement, and the Chamber of Commerce is anxious that this problem be tackled by those who are at once interested and informed.

The question of smoke pollution, with its consequent effect upon health, cleanliness and fog, has occupied many municipalities' attention, sometimes resulting in stringent smoke nuisance laws, which are difficult to meet and usually costly in the enforced alteration of equipment.

Furthermore, the fuel situation is not in a satisfactory state, as is evidenced by the fact that prices have not gone down from their war-time level, and in all probability will rise still further.

The improvement of efficiency, which is necessarily the result of proper smoke elimination, will naturally help to relieve the situation in shortage of fuel, much along the same lines as those so successfully pursued by the local Fuel Administration Committees.

The Chamber of Commerce believes that, following the example of Pittsburgh, much can be done by the manufacturers to save their own money and anticipate the possibility of undesirable smoke restriction laws.

We are confident the enclosed outline will suggest a reasonable approach to the problem, and that you will be glad to join with the other major industries of the city in its solution.—Very truly,

BRIDGEPORT CHAMBER OF COMMERCE,
Seward B. Price,
Executive Secretary.

A questionnaire covering the operation of steam boiler plants accompanied the letter, as well as the outline referred to, which is entitled "Outline of Proposed Organization and Work of a Smoke Commission." The Bridgeport Chamber of Commerce will be glad to supply copies of the questionnaire and outline to any who may inquire for them.

The Smoke Abatement Commission includes thirty power engineers, who are undertaking the work of smoke abatement in the Bridgeport district in a most thorough manner. The Chamber's industrial engineer has specialized in combustion and is well qualified to lead the movement.

The Mosque in the Agra Fort

Among the most beautiful of Shah Jahan's sculptured monuments is the Pearl Mosque at Agra, states Gertrude Emerson in *Asia*. The entrance gateway of red sandstone contrasts effectively with the interior of white and blue-veined marble. An inscription in letters of black marble states that this mosque may be likened to a precious pearl, for no other mosque is similarly lined with marble. The Indian influence upon Mohammedan architecture of this period is evidenced in the lotus petal cap decorating the domes and in the purely Hindu finials, legitimate Mohammedan mosques bearing instead the simple spire with the star and crescent. The foliated arches come from a Buddhist source, symbolizing the lotus leaf-shaped aura around the body of Gautama. The pointed upper foliation is derived from the shape of the leaf of the bodhi or pipul tree, under which Gautama attained to enlightenment and Buddahood, and is commonly used in Buddhist idolatry to indicate the nimbus around the head. The master builders of Mogul days were chiefly Indians from Bengal, and since they were artists and artisans rather than mechanical workmen, much of the inspiration of the architecture of this period must be credited to them.

Fire Destroys New York's Fine Arts Building

A fire, the origin of which is attributed to a short circuit of electric wires, totally wrecked the Vanderbilt Galleries and the Fine Arts building, 215 West Fifty-seventh street, in this city, on the morning of January 30. The exhibition of the Architectural League of New York had been completed in all its details and was ready for the opening ceremonies of the evening. It was completely destroyed. Full particulars of this most regrettable happening, together with complete description and illustration of the exhibition will appear in a later issue of THE AMERICAN ARCHITECT.

Serbians Again Making Rugs

Once more Serbians are taking up the making of rugs and tapestries, which was one of their principal occupations before the war. Serbian rugs have ever been noted for the richness of their color and design as well as the durability of their dyes. Though the country has suffered much from its seven years of warfare and pillage, the knowledge of weaving and dyeing has been preserved.

Serbian women have organized a school of weaving and here they work almost entirely at hand looms. Red Cross workers, who by feeding and clothing the suffering population helped them to re-establish their normal occupations, are bringing back samples of rugs and tapestries to this country. In making a market for the Serbian wares the Red Cross Commission is fulfilling its object, which includes not only the performance of relief work, but the establishment of means whereby future relief will be unnecessary.

Competition for Design for Architects' Certificate, State of Pennsylvania

The board of examiners of architects in the State of Pennsylvania propose to hold a competition for the purpose of securing a design for a certificate of registration.

All architects, draftsmen or other designers are eligible to compete. Designs must be delivered to the secretary of the commission, M. I. Kast, 222 Market Street, Harrisburg, Pa., on or before April 1, 1920. The first prize will be $200, second prize $100. Competition program may be had on application to the secretary. The State Board of Examiners of the State of Pennsylvania is composed as follows: John Hall Rankin, president; M. I. Kast, secretary; Clarence W. Brazer, Edward Stotz and Edward H. Davis.

Back to the Farm Movement Noted

According to a report just issued by the Vocational Summary it appears that the back to the farm movement has started in earnest.

The report states that 19,859 pupils over the country were enrolled in agricultural subjects in vocational schools during 1918 and 1919.

The report further states that this is an increase of 4442 students being trained in this subject. It is interesting to note that this is only the second year in which practical instruction of this sort has been within reach of the average child of school age.

The Bureau of the Census approximates an increase of one million farms in the United States during the last ten years. This increase, together with the increase of scientifically trained men to operate them, will secure the future of agricultural America.

Foreign Trade Convention to Be Held in San Francisco

Notices have been received from the National Foreign Trade Council, New York, of the Seventh National Foreign Trade Convention which is to be held in San Francisco on May 12 to 15, 1920. Emphasis is placed on the fact that this will be the Council's "First World's Conference of American Foreign Traders," and preparations are being made to welcome a large number of American traders living and doing business abroad.

In the plans of the convention provision is made for a series of group sessions, whereby the interests of each country will be discussed and promoted.

This annual convention of the National Foreign Trade Council is a real business conference, planned and directed on a business schedule. When a trader signifies his intention of attending the convention he is invited, in advance of the meeting itself, to state the problem of foreign trade confronting his business. His problem then is given to the organizer of a special group session, or to special trade advisors, in advance of the meeting. The result is that the question is discussed from all angles by the foremost specialists in the field, and it remains for the person interested to profit by the concrete answer.

For further information on the subject of the convention, all interested parties can write to Mr. O. K. Davis, Secretary, National Foreign Trade Council, 1 Hanover Square, New York City.

New York's Smallest Newspaper

The recent appearance of what boasts to be New York's smallest newspaper has brought forth from Governor Alfred E. Smith the comment:

"While this may be the smallest newspaper published in New York City, the work it represents is most important."

Better Times, as the paper is called, is being published in the interest of the United Neighborhood Houses of New York, 70 Fifth avenue. Its diminutive pages, measuring only four by six inches, are filled with news and comment on what is being done in this city to promote community progress.

Of the activities with which the tiny journal concerns itself Gov. Smith said:

"I have been personally acquainted with the work of the neighborhood houses for many years and understand the great good which they accomplish. I am heartily in favor of all its work and activities and trust that *Better Times* will have a prosperous career in making known to the public more generally the activities of the United Neighborhood Houses."

The first regular issue of *Better Times* is now occupying a conspicuous place on newsstands all over the city. Exactly like a metropolitan daily in form, only about a thirtieth the size, it has attracted much attention.

Better Times will be issued monthly and will contain contributions from some of the city's leading newspaper men and artists. George J. Hecht, formerly of the Committee on Public Information, is the editor.

U. S. Navy Program for 1921

Three first-line ships, two battleships, one battle cruiser and twenty-five other vessels, some of which are of a new type developed during the war, comprise the program of naval construction for the United States Navy for 1921 as recommended to the Secretary of the Navy by the Navy General Board. The Board also recommends an appropriation of $27,000,000 for aircraft production and experimentation. The report adds: "Unless a limitation in the size of armaments is reached by international agreement through the League of Nations, the General Board believes that the policy of the United States upon which its building program is formulated should be continued."

Conference on Concrete Housing

Modern practice in the execution of concrete housing projects will be one of the chief topics for consideration at the National Conference on Concrete House Construction, which is to be held at the Auditorium Hotel in Chicago on Feb. 17, 18 and 19. During the same week the annual meetings of the American Concrete Institute, the Concrete Products Association, the Concrete Block Machinery Association and the American Concrete Pipe Association will be held at the same hotel, so that an opportunity is offered each visitor for attendance at the sessions of most interest to him in the several conventions.

The purpose of the conference is twofold: First, to consider the housing problem in the United States and Canada; second, to present, crystallize and make available information regarding the most modern practice in the construction of concrete houses and concrete housing projects. Every phase of the housing problem will be considered.

News from Various Sources

France prohibits the exportation and re-exportation of roofing slate and of tiles, as follows: Common tiles not pressed and without flanges, mechanical or interlocking tiles and accessory roofing materials.

* * *

Construction is progressing on the new Wolverine Hotel in Detroit. This building will be seventeen stories high and will include 500 rooms. The announced cost of the project is $2,000,000. It is expected the hotel will be completed by August, 1920.

* * *

Twenty-five deserters who reached Switzerland during the war have formed a unique league, the object of which is stated by its founders to be "defense of our interests." The members are chiefly from the Central Powers, none being American or British.

* * *

Wisconsin farm crops in 1919 had a total value of $395,752,000, according to Joseph A. Becker of the Wisconsin crop reporting service. This is 4 per cent greater than 1918 and treble the value of crops in 1909. The acreage increased 1.3 per cent over 1918.

* * *

The London *Daily Mail* claims to know that James Henry Thomas and the other leaders of the National Union of Railway Men, having accepted the government offer with respect to the demands of the men, will resign rather than lead a strike on this issue.

* * *

Great Britain is rapidly converting her wartime extensions in manufacturing plants to commercial uses, particularly in locomotives and railway equipment. Much of this extension is being turned to the supplying of equipment needs, Europe, as a whole, being heavily in need of this sort of manufacture.

* * *

With the acceptance of House amendments, the Senate has completed the adoption of a bill providing for the appointment of a commission to pass upon the practicability and to devise plans for the construction of a public bridge over the Niagara River, near Buffalo, N. Y. The bill now goes to the President.

* * *

A customs union between Canada, British West Indies and British Guiana, such as has produced such good results for the United States, Porto Rico and the Philippines, was recently advocated before Cabinet Ministers and Members of Parliament at the Canadian Club luncheon by T. B. MacAulay, president of Sun Life Assurance Company.

* * *

Coal production amounted to 544,263,000 tons in 1919, compared with 678,212,000 tons in 1918, preliminary estimates announced recently by the Geological Survey show. Bituminous production was 458,063,000 tons, compared with 579,386,000 in 1918. Pennsylvania anthracite production was 86,200,000 tons, compared with 98,826,000 tin 1918.

* * *

The entire war debt of America will be wiped out in a comparatively few years on the present basis of Government receipts and expenditures. The total national debt on Dec. 31, 1918, was $25,837,000,000, a reduction in only four months of almost $760,000,000. The floating debt at the end of the year was only a little more than $3,500,000,000, and less than half of this must be funded. This will be taken up in the next few months, in the opinion of the Secretary of the Treasury.

Little progress has been made in house building in London, which continues to be one of Britain's greatest economic problems. The Government is now about to offer a subsidy of £150 (nominally $750) per house to private builders, but the proposal has not created much enthusiasm. Treasury now proposes to empower local authorities to issue 5½ per cent bonds, from £5 up, free of income tax up to £500.

* * *

The distinction of being the largest lumber and other wood products manufacturing town of its size in the United States is claimed for Lufkin, Tex. It is shown by figures just compiled that during 1919 approximately $6,000,000 worth of lumber was shipped from there. According to these figures the business done by local lumber mills in 1919 represents an increase of from 15 to 22 per cent over that of 1918.

* * *

Leading Chicago bankers and other business men interviewed criticised the Government for excessive and inequitable taxation, particularly the excess-profits tax, which, they say, is the main contributing factor in the present high cost of living. Suggestions for a substitute include a consumption tax, lifting of the virtual money embargo to Europe, so American business may profit by a more equable money exchange, and various means of taxation.

* * *

The Norwegian budget for 1918-19 contained an item of 22,250,000 crowns ($5,963,000), to be expended by the Government in the development of water power, in addition to 1,000,000 crowns ($268,000), appropriated under special acts. The corresponding appropriation in the budget for the present fiscal year is considerably larger, totaling 29,972,000 crowns ($8,032,496). It is expected that the appropriation for the same purpose in the budget for the year 1920-21 will amount to 20,000,000 crowns ($5,360,000).

* * *

In his instructions to the prefects of the ten devastated departments, M. Tardieu said: "France was able in a few months to create out of practically nothing those war factories which made victory possible. The same methods are to be applied to solve the problem of reconstruction. As soon as the list of the industrial machinery necessary to our work will have been established by your reports, I am resolved to take the necessary measures to assure its immediate supply and to set all to work, so that by spring the period of the realization of our work will start as fully as it should."

* * *

One of the largest ship and armament building companies in Great Britain has converted an extensive shell plant into locomotive shops.

The conversion of this plant, which had manufactured 14,500,000 shells during the war, and the production of its first main line locomotive were accomplished within a year from the armistice.

The same company has transformed one of its gun and gun carriage shops into marine engine works, turned another war-material shop into an iron foundry, diverted gun forces to the production of marine shafting, altered armor plate mills to manufacture ship and locomotive plates, re-arranged its shipyards so that their greatest output is now merchant instead of war craft, acquired an electrical works for building its own power machinery, and also expanding in the construction of pumping engines, cranes, dock gates and similar output.

Personals

The Sanoma Corp. and C. K. Sanborn Corp. now have quarters at 149 Broadway, New York.

E. M. Wood, architect, Alma, Mich., has removed his office to 519 Oakland Building, Lansing, Mich.

W. E. Hulse Company, architects, have opened a branch office at 210 Masonic Building, Des Moines, Iowa.

New firm of architects, McDowell & Greasly, have opened offices at 207 Iowa Building, Des Moines, Iowa.

Osgood & Osgood, architects, Herald Building, Grand Rapids, Mich., moved to Monument Square Building.

A. L. O'Brion, architect, is just starting in business and has opened an office at 819 Shipley Street, Wilmington, Del.

M. G. Lepley, architect, Colorado Building, Washington, D. C., has moved to 500 Bond Building, Washington, D. C.

Price lists, catalogs and manufacturers' samples are desired by F. Worthington of 253 Totowa Avenue, Paterson, N. J.

Frank W. Hunt has moved his office from Springfield, Mo., to 410 Commerce Building, Miami, Okla. Catalogs are desired.

H. H. Warwick, architect, Colorado Building, Washington, D. C., has moved to 743 Munsey Building, Washington, D. C.

Keffer & Jones of the Hubbell Building, Des Moines, Iowa, have moved into larger quarters at 204 Masonic Temple, Des Moines.

E. E. Fairweather has moved his offices to 8½ Chambers Street, Cleburne, Texas, and desires manufacturers' price lists, samples, etc.

Irving R. Brown has opened an office for architectural practice at 552 Franklin Avenue, Nutley, N. J., and desires building material samples and catalogs.

Harold Tatum, architect, is now located at 1216 Washington Street, Columbia, South Carolina. He desires to receives manufacturers' samples and catalogs.

F. T. Uzell of Philadelphia, has discontinued the practice of architecture and his business will be carried on by Mr. Andrew C. Borzner, 717 Walnut Street, Philadelphia, Pa.

Eugene T. Benham and William J. Richards announce that they have opened offices at 214 East State Street, Columbus, Ohio, for the practice of architecture. Catalogs are desired.

The Osborn Engineering Co. of Cleveland, Ohio, incorporated for almost thirty years as consulting engineers, has recently organized a department of architecture and is offering professional services in that field.

John P. Krempel and Walter E. Erkes, architects and engineers of Los Angeles, will move their offices from the Henne Building to suite 538-539 Bradbury Building. The new offices are being remodeled and will be occupied by November 1.

Engineer Ellis W. Taylor has returned to Los Angeles after service in the United States Navy for the past two and one-half years. He is now associated with his brother, Architect Edward C. Taylor, with offies at 607 Merritt Building.

W. E. N. Hunter, 1306 Chamber of Commerce Building, and Niels C. Sorenson, 500 Congress Building, Detroit, Mich., have combined their offices to engage in architectural practice at 1306-1307 Chamber of Commerce. The firm will specialize in ecclesiastical and institutional work.

Waggaman & Ray, architects, formerly of 1742 M Street, N. W., Washington, D. C., have moved to 1147 Connecticut Avenue, N. W., Washington, D. C., and John M. Donn has opened a new office at 1147 Connecticut Avenue, Washington, D. C. His office was closed during the war.

Buildings for Federal Reserve Banks

(*By special correspondence to The American Architect*)

WASHINGTON, D. C.—The National Lumber Manufacturers' Association took exception to the views of the Federal Reserve Board on building operations, as expressed in a public statement recently. The Board had issued orders to member banks to postpone new construction because of high prices. The organized lumber manufacturers pointed out the harmful effect that such a statement would have on the entire construction industry.

Governor Harding's reply, explaining the attitude of the Board toward construction at present prices, reads: "The Federal Reserve Board does not assume to be able to make a forecast of the future, but in view of high construction costs, which now confront all who are engaged in building operations, the Board feels that it will be helpful in the present situation if the Federal Reserve Banks, which can manage to get along with their present accommodations for some time longer, give way to building operations of a more urgent character and avoid competing for labor and materials with those who are compelled to build, regardless of conditions.

"Considerable interest has been manifested in the building trades over the proposed building operations of the Federal Reserve Banks, and in order that the Board's reasons for postponing new construction might be generally known, this statement to the press is made. The statement was not intended as advice to the general public to check building operations, as the Board believes that under present conditions the problem confronting those contemplating building operations is one to be solved by each individual for himself, and the urgency of the case will, no doubt, be the deciding factor in most instances, except where it is believed that costs are going still higer."

Financing Rural Settlers

(*By special correspondence to The American Architect*)

WASHINGTON, D. C.—The Senate Committee on Public Lands has reported back favorably the Senate bill, providing for extension of rural homes. The bill has been placed on the calendar. It will probably be brought before the Senate within a few weeks.

The measure authorizes the use of the Reclamation Service in the development of reclamation projects to be entirey financed by private capital or by the sale of local district bonds, and is applicable to all sections of the country.

The Department of Interior, which is the sponsor for the bill, believes that under its operations settlers will be able to effect savings equaling as much as one-half and more of the prices they ordinariy pay for small rural holdings.

Britain Proposes Subsidy to Solve Housing Problem

The housing problem in Britain is taxing the government for an acceptable solution. Plans for 500,000 new houses have failed, for only a few score homes have actually been completed since the armistice. Foundations for but 3400 more have been laid. A plan put forward provides a government subsidy for builders not exceeding £150 a house. Commenting on this proposed policy a political writer says:

"Everybody may get this grant, provided he produces the house. And this grant is intended, as the Prime Minister put it, to bridge the gulf between present prices and permanent prices. A very nice way, too, of putting it. Also, bricklayers are to be appealed to to lay more bricks per hour, and in addition municipalities are to appeal to local patriotism for money for housing loans.

"But nothing was said about the probable return. At present a workingman's official house seems to cost from about £750 upward. A rent of 5s. or 7s. 6d. is the highest you can expect, said Lord Hugh Cecil, speaking of the rural districts, and that rent would leave a deficit of some £40 a year on the house. The deficit might be less in urban districts; it would be a good deal less if bricklayers laid up to the pre-war standard, realizing that they were building their own houses. But the chance of a profit would seem to depend on so many houses being built that the price of materials would fall. But the same causes would bring down rents.

"Every one must hope that the government plan will work, but the finance of the whole scheme is very vague and sketchy, and the House doubts whether it will produce the required houses. There was a great deal of objection to the subsidy. Some who welcomed the new reliance on private enterprise thought that advances at a low rate of interest would be preferable to subsidies. Criticism was for the most part destructive, but every one realized that a solution of this problem lay at the root of nearly all projects of social reconstruction. Mr. Lloyd George has never done a better piece of exposition than that with which he opened his speech. But it is a painful fact, emphasized by several speakers, that we are now, twelve months after the armistice, no further advanced than we could and should have been when the armistice was concluded."

Prize Offer to End Slums

Prizes aggregating $6 000 have been offered by Vincent Astor, Alfred E. Marling, president of the Chamber of Commerce, and the New York Foundation in a competition having for its purpose the ultimate destruction of all the slums in New York City. The New York State Reconstruction Commission announced that this means had been taken of stimulating the architects and builders of the city to devise means to remove the conditions which had been revealed in the survey of the congested quarters conducted by the commission last spring. The competition has been made possible by the co-operation of the Joint Legislative Committee on Housing, of which Senator Charles C. Lockwood is chairman.

According to Clarence S. Stein, secretary of the Housing Committee of the Reconstruction Commission, there are more than 400,000 apartments in "old-law" tenements, the dwelling places of 2,000,000 New Yorkers, which are not fit to be called homes. The building of 400,000 homes would be a colossal task at a time when new walls were never so expensive. The problem is to use the old shell and make it into a well-planned, sanitary, light place, fit for habitation. Large-scale plans have been drawn of a characteristic block on the lower east side, showing every wall, door, window, plumbing fixture, court shaft and yard. The competitors are to make drawings showing how this block may be altered to bring it up to present-day standards.

A primary condition of the contest is that such alterations must be commercially possible. The contestants must prove to the landlords that the rebuilt houses will more than repay the cost of repairs in decreased number of vacancies and the returns which will be paid willingly for better accommodations.

According to the statistics gathered by the commission between February, 1909, and March, 1919, there were 58,552 "old-law" tenements torn down. At this rate, it would take a hundred years before they would all disappear. Of 982,926 apartments in New York City in 1919, more than half, or 587,851, were "old-law" tenements, erected before the law of 1901 was passed, thus placing 60 per cent. of the apartments of the city in a class below the standard fixed nineteen years ago.

The competition committee will consist of Burt L. Fenner, Robert Kohn, Andrew Thomas and Mr. Stein. The judges will include the members of the competition committee and Frank Mann, tenement house commissioner; Alfred E. Marling, Senator Charles C. Lockwood, Senator John J. Dunnigan, Alexander M. Bing and Allan Robinson. There will be eleven prizes, including two firsts of equal value.

Ancient Art Windows Restored to Paris

The valuable and ancient stained-glass windows of the Paris churches that were removed to places of safety during the bombardment of the capital by German long-range guns are being rapidly replaced.

The wonderful mediæval glass of Notre Dame and the Sainte-Chapelle has already been returned, and now the windows of five other old churches, Saint-Gervais, Saint-Severin, Saint-Merry, Saint-Etienne du Mont and Saint-Germain l'Auxerrois, are to be put back. These are all very fine specimens of Renaissance art.

The windows of only one of the old Paris churches were seriously damaged by the war, those of Saint-Denis, which were partly shattered by the explosion at Courneuve.

Pennsylvania Law Compels Architects to Register

An enactment of the Assembly of Pennsylvania signed by the Governor provided for the examination and registration of architects by a State Board of Examiners, to consist of five architects, each of whom must have had ten years' or more experience in active practice. They serve for a period of five years with a per diem allowance for expenses for meetings and examinations.

All persons not engaged in the practice of architecture or known as architects at the time of the passage of this act must submit to examination and be registered by the Board of Examiners before being allowed to practice. The board may accept as sufficient evidence of competence a diploma from an architectural school and a statement that the architect has had three years' satisfactory experience with a reputable firm of architects. The board

may also accept a certificate of registration from another state or country having similar requirements.

Holders of certificates issued by the board are required to sign all drawings "Registered Architect." The act does not prevent other persons from filing plans for building permits, but it does prevent such persons from using the title "Architect" in any form. Violations of the law are punishable by fines or imprisonment.

Belgium to Build Workers' Homes

The Belgian Government has decided to allocate 100,000,000 francs in 1920 for building workmen's houses, states a foreign correspondent of the New York *Sun*. This money will be lent to the local authorities or approved building societies at 2 per cent for twenty years, at the end of which time a new agreement will be entered into.

The conditions are that no loan may exceed half the cost of the building or a maximum of 6,000 francs and the rent charged must not amount to more than 4 per cent of the total cost of building.

It is officially calculated that the cost of building in the devastated areas will be about 10,000 francs a house. A garden city of 100 houses in Roulers was begun Sept. 21 and is to be finished in 120 working days.

Building Conditions in Italy

Among other proposals to stimulate building in Italy, it has been suggested, says the Trade Commissioner at Rome, that under certain conditions new buildings should be exempted from taxation for a period of 15 years for dwellings for the better class and 20 years in the case of tenements. Previous to 1914 building companies and individuals in Rome constructed from 10,000 to 14,000 rooms per year, which, however, were barely sufficient to take care of the normal development of the city. During the war of course private building operations practically ceased and since the armistice little has been done. The great building institutions have suspended new construction for the reason that the increased cost of materials and the higher wages which must be paid to workmen do not permit their stockholders to derive a reasonable profit. Private builders, according to the Trade Commissioner, are in the same position and are doing nothing. In all the principal Italian centers of population the shortage of housing accommodations is acute and strenuous efforts are being made to stimulate action in order that relief may be afforded.

London May Have Housing Committee

Mr. Aldridge, secretary of the National Housing and Town-Planning Council, speaking at a meeting in connection with the housing and town-planning exhibition at Whitechapel Art Gallery, London, England, said that the Housing and Town-Planning Council was so convinced of the gravity of the London slum problem that it was proposed, following on a conference of all the local authorities of Greater London, to be held early in December, to set up a special committee for the purpose of submitting to the people of London a comprehensive housing and town-planning policy dealing not only with the slums, but also with the development of the suburbs and the evolution of new transit faciities and kindred questions.

Housing reformers, Mr. Aldridge said, were agreed that the minimum standard of a proper family home was that of a five-roomed house, with bath and an ample garden standing in an estate properly planned. The slums of London, he declared, must not be patched up, but must be made to disappear. It might take 20 years, but if any element of slum property owning barred the way to the local authorities, he hoped Londoners would apply the dictum of Lord Fisher and "sack the lot."

Factories should not be at the great centers, but along the river, and the great trunk lines should be on the outskirts of London. He hoped any endeavor to increase the number of tenement dwellings near the center of London would be steadfastly opposed.

Obituary

Francis Hatch Kimball, born in Kennebunk, Me., in 1845, died recently after a noteworthy career in architecture. He is said to have been first to use the caisson system of foundation for the erection of buildings and was called the father of the skyscraper. At the time of his death he was associated with George K. Thompson in New York, with whom he planned the City Investing Building, Garrick Theatre, Manhattan Life, Trust Company of America Building, U. S. Realty and Adams Express Co. buildings. He was a particularly successful exponent of Gothic architecture in this country.

American Students Going to French Universities

This year is likely to see a great influx of American students to French universities, in the opinion of H. S. Krans, secretary of the American University Union in Europe. Mr. Krans's new Paris headquarters, facing the Luxembourg Gardens, are being fitted up to receive and advise seekers after knowledge overseas.

Founded shortly after America's entrance in the war, by fifteen of the leading American universities and colleges, the Union now has thirty-three American learned institutions on its membership list, including Harvard, Yale, Columbia, Johns Hopkins, Princeton and other leading universities and colleges throughout the United States.

"Paris is destined to become the brain of the world," said Mr. Krans to a correspondent of the Associated Press. "German universities will be largely avoided by Americans. Dogged determination was shown by one young New York student who arrived here with the problem how to board and live on 6 francs a day. Through the medium of the Union, a French landlady gave him a small room for 2 francs a day. The young man cooks his own meals, and is 'passing rich' on 4 francs a day."

French teachers and students are constant and eager inquirers at the Union's Paris home. Many of them are anxious to take a course of studies in the United States. Fourteen French students are already studying in American universities on free scholarships from a fund collected by 6000 American students in recognition of the hospitality extended to them by French universities during the war.

The Society for American Fellowships in French universities is planning to send twenty Americans each year to the Sorbonne and other French seats of learning; nor will the Alsatian University of Strasburg be neglected. Twenty-five scholarships for American girls in France are already filled.

For French National Expansion

There has been created, under official decree signed by the President of the Republic, a new bureau to be known as the Office Central d'Expansion Nationale, the object of which is the propagation in France and abroad of economic, artistic, scientific and linguistic initiative.

The creation of this special office has in view a coordination of efforts in the various fields designated, as regards both governmental and private enterprises, through a central bureau, instead of passing, as heretofore, through different ministries. This service is to be attached to that of the presidency of the Council. Too much time and effort were formerly lost through lack of harmony between the different bureaus.

Heat Energy from Air a Possibility

Heat energy of the atmosphere is sufficient to replace fuel for all purposes, according to a paper H. H. Platt of Philadelphia read at the recent convention of the American Association for the Advancement of Science in St. Louis. He urged the scientists to use their energies to bring about means of "abstracting this fuel so as to relieve coal oppressed humanity."

New Laws Protect Tenants

A law making it a crime for a landlord or his agent not to supply heat, light, and other service specified in a lease, with penalty of imprisonment for not more than a year or a $1,000 fine, is proposed in the report of the Lockwood Housing and Anti-Profiteering Committee, Albany, N. Y. The committee also favors a law placing the burden of proof on a landlord or his agent when he seeks to break a lease on the ground that the tenant is undesirable.

Sherman Protests Bill to End Housing Body

L. K. Sherman, president of the United States Housing Corporation, has written to Chairman Fernald of the Senate Committee on Public Buildings and Grounds, protesting against the pending bill to abolish immediately the housing corporation. Mr. Sherman expressed the belief that the corporation should be permitted to proceed with the sale of housing projects so that it may, on June 30, 1920, turn over its affairs in an orderly manner to its successors.

Weekly Review of Construction Field

Comment on General Condition of Economics with Reports of Special Correspondents in Prominent Regional Centers, Late Quotations in Building Material Field

THE reports from the various special correspondents in regional centers, as well as the quotations on building materials, printed in this issue, are not of January 7th, but are current with the present date of writing, February 1st.

PERHAPS the most serious complication in the building situation in this country is the difficulty of securing materials. In the current issue of the Illinois Society of Architects' Monthly Bulletin, Mr. F. E. Davidson, editor, after a careful survey sums up present conditions as follows:

At present, it is impossible to determine, not only what a building should cost, but to even estimate what it may cost. Nor is it possible under present conditions for any contractor to be assured of his ability to complete any work in time or according to a pre-arranged schedule.

The shortage of materials, the scarcity of transportation facilities, the present intolerable mismanagement of the railroad systems, the loafing of labor, the unholy demands of business agents, the profiteering by organized interests controlling building supplies, all tend to stack the cards for and against the owner and architect in the game of securing 100 per cent of building output for ever 225 per cent of cost.

Probably one of the chief causes for this situation is the present shortcomings and future uncertainty in our transportation system. A telegram from the Cleveland Chamber of Commerce to its Senators in Washington reads: "Industrial production is being curtailed here as a result of the shortage of box cars. Manufacturers and business men point to the vital need for immediate increase in the locomotive and car supply if trade is not to be hampered, unemployment result and the country generally suffer."

It is already suffering and has been since last August, when the railroad shopmen struck. Bank credits are absorbed in moving crops which cannot be moved. Side tracks are full of cars out of repair.

Carriers, which are due to be returned to private ownership, are earning only fractions of the net income guaranteed by the Government. If the Government continues its support at the present rate and the situation continues to drag along, there is no relief in sight for our needs of the present and of the immediate future.

THE increase of carriers' expenses has been enormous, the increase of the freight rates has been comparatively slight. That good and generous father to us all—the Government—pays the difference. It is worthy of remark that the sharpest increase in commodity costs was late in the year 1915. There was no material increase in rates until August, 1917. From that time the increase in commodity prices was very gradual. The average commodity value of a ton of freight in 1919 has been $119, as compared with $56 in 1914. The average freight charge has been $2.80 as against $2.00 in 1914. The increase in the cost of the average ton has been $63, while the increase in freight charges has been 80 cents. Considering, therefore, the tremendous increases which the railroads have had to pay for wages, they naturally expect that with the end of Government regime they will be given some relief.

This, it is believed, is what the carriers want, and that it is the trend of business everywhere to stand on its own feet, and that that is what the peope want.

With this transportation muddle satisfactorily settled

and the factories relieved of uncertainty as to securing supplies and shipping their product, the occasion, at least, for shortage and in some cases absolute want of material will be alleviated.

The impossibility of securing dependable quotations of prices is another matter. There is first the continual increase of costs for manufacturers' labor. So much has been said and written on this subject that we are still in a turmoil and still hot, but nothing in the way of a solution which is constructive and stabilizing, has been offered, except the Board of Jurisdictional Award.

There is a reduction in the number of strikes and a realization by the working men that the problem is not the simple matter of demand as they had evidently grown to believe. There are tangible evidences of a co-operation between the managers and the more sober element of labor in England and on the Continent which will doubtless be reflected to this country.

Another cause of hysterical prices is the intense speculation which runs through our whole financial fabric as a natural result of its inflation. The Federal Exchange Banks have made one or two ineffectual attempts to cope with this evil. They are now ready to start upon a broader policy which is being discussed at a conference in Chicago.

And another cause, perhaps the most forceful of all, is so obvious that it seems unnecessary to mention it: the unprecedented demand.

(By special correspondence to The American Architect)

CHICAGO

Perhaps the one big thing of interest in the architectural field in Chicago just now, aside from the increase in building, is the work of the zoning committees. Discussion of the zoning plan for Chicago has been under way ever since the visit here in December of Chairman Bassett of the New York Zoning Commission. It is expected that reports will be made public shortly.

One of the committees whose report will be submitted to the city authorities in the near future represents the local architects' organization.

The plan which at present seems to be attracting most attention and which is under consideration by the City Council provides for a commission of eighteen members, to be made up of representatives of the city administration, city council and citizens generally. It is proposed to make a wide survey of the entire city to determine the future need of Chicago in an industrial and residential way and to determine the best character of development in the various zones to be agreed upon. The work has been fostered by the Chicago Plan Commission for some years.

As to the building situation: Local architects express themselves as satisfied that prices of building materials have about reached their peak. Labor is scarce, however, and the prediction is made that there will be a very slow reduction in price levels for the next two or three years, probably longer, in both labor and materials.

The labor situation in the building industry promises a condition of greater stability during the coming year, because of the organized dealings between employers and employees with full recognition of the term contract and arbitration principles. Statistics show that 95 per cent of the number of strikes and 75 per cent of the days of idleness in the building trades have occurred through controversies between wage earners themselves, as to which trade should do the work. Only 5 per cent of the strikes have been on questions between employer and employee.

Figuring the cost of the total building during 1919 in the States east of the Missouri and north of the Ohio rivers reported to the F. W. Dodge Co. at $2,500,000,000, their Mr. Miller estimates the 1920 contracts will aggregate $2,800,000,000.

(By special correspondence to The American Architect)

SAN FRANCISCO

Source of supply and delivery of materials on hand are the most serious difficulties which the architect and building contractor have to face in this section. Prices in practically all commodities are steadily rising and there is constant pressure being brought to bear on the prospective builder in regard to the advisability of not putting off work any longer. Even at the present time it is necessary to place orders considerably in advance of the time they are needed, and the number of large contracts looming up for the downtown section of San Francisco leads the contractor to believe that the situation will not be improved upon for several months at least. The demand arising from the proposed erection of several large office buildings, together with the growing amount of smaller commercial structures which are planned for early 1920 building, and the hundreds of residences of all types, is bound to keep somewhat ahead of the supply, according to the opinions expressed by the leading builders of the State.

Long-term loans of large amount are offered here in San Francisco in order to encourage the reconstruction period to the greatest possible extent, with the argument of advancing prices ever kept before the public.

High rents and scarcity of proper housing facilities in the city districts are stimulating suburban real estate activities and from the outlying regions of this city come reports of constantly increasing construction work.

Both brick and clay material manufacturers and lumber men state that they are behind on production. Lumber mills in this State kept the 1919 season open as long as possible and are planning to commence operations earlier than ever this year.

(By special correspondence to The American Architect)

SEATTLE

The fir lumber market and the car supply are synonymous. Responding to urgent pleas of manufacturers in this territory, the car service department has been ordering cars west, and there are to-day more cars on the transcontinental lines bound for the lumber territory than at any time for a year. Plenty of cars mean not only a halt in the upward tendency of the lumber market, but a probable decline.

The mills hold unfilled orders for the Eastern and Middle Western building trade for 12,000 carloads. Should the supply of cars jump to 80 per cent of normal, as has been promised by the car service department of the railroad administration, the market will ease. It is the history and philosophy of the fir lumber trade that where cars are being supplied for loading with reasonable promptness, and volume manufacturers become uneasy and some of the big mills cut prices. During the past week the car supply has increased perceptibly, and this fact alone has tended to check down the speedy and arbitrary strength in quotations. In their telegram to Washington for relief, the mills placed the responsibility for the high lumber market on the car service department. Obviously prices must fall when the car supply increases and the mills are able to make shipments.

Department of Architectural Engineering

The Architectural Engineer

Being a Discussion of the Inter-Professional Relations of the Architect, the Architectural Engineer and the Engineer

By R. W. YARDLEY, *A. I. A., Mem. A. S. M. E.**

AT the conclusion of an address given by the writer to a class of engineering students, the following question was asked evidently in a facetious spirit: "If I understand you correctly, all that is necessary to prepare oneself to be an architectural engineer is to complete courses of study in civil, mechanical and electrical engineering in some approved university; then to spend a couple of years with a firm of reinforced concrete engineers, a like period in the drafting room of a structural engineer, likewise with a firm specializing in the design of heating, ventilating or power plants, and some time devoted to superintending all these kinds of work. After one has completed such a program of work, would he properly qualify as an architectural engineer?" After the laughter had subsided the reply was made that he *might* qualify provided he did not specialize too much in any one branch and if during his spare time he worked in an architectural office.

This question brings up several interesting phases of the subject of architectural engineering, and architects may well ask, what is an architectural engineer, what are his necessary qualifications and duties, and is he necessary to the practice of architecture? We will consider these questions in the reverse order.

It is not intended to reopen the controversy concerning the action of the Government in calling the engineering fraternity to control the major portion of its construction activities during the war, but is it not probable that this was due largely to an impression that had been fostered by the architects themselves? For many years past the architect has taken every opportunity, and justly so, to emphasize the idea in the minds of the public that the work of the architect is that of an artist and designer and that it is not that of an engineer or a constructor. Construction has not been entirely sacrificed by architects, but many have looked upon it as a necessary evil that should be concealed as much as possible. The constructional and mechanical parts of a building can nearly always be designed so as to provide for the needs of almost every conceivable condition that may be imposed, and it is this quality of the adaptability of engineering work that causes many architects to design without considering the structural and mechanical features.

Art is not the work of the engineer, and it is entirely proper that architectural design should be first and engineering second, but only within limitations in each which will not cause either poor architecture or bad engineering.

A study of many prominent buildings in this country discloses the fact that the fundamental principles of architecture are violated in that the exterior design in no way expresses the plan, because the plan has been arranged with a view to utility and construction and the exterior considered only as a problem in pure design. The discrepancy between design and construction is often so patent, even to laymen, that a building is considered as having something wrong with it and its value is greatly decreased on this account.

The great advances made in the art of building within the past thirty years have made it impossible for the architect to produce a complete design unaided. An inspection of the plans used for the construction of the greatest buildings erected before that period of time are a revelation as to the limited needs of structural and mechanical knowledge. At that time the architect who was an artist was entirely self-sufficient and the influence of that condition has been unconsciously encouraged among architects until this day. As improvements in steel and concrete construction, plumbing, heating, ventilation and electrical work developed, the

*Of Perkins, Fellows and Hamilton, Architects, Chicago.

designing of these things was done largely by contractors. This often by the wish and consent of the owner who did not then consider it within the legitimate scope of the architect's work. But at the present time it is impossible for the architect to evade the intimate contact and the responsibility for these rather prosaic and often troublesome features of buildings. Although often questioning the architect's knowledge of these things, the owner requires that the architect assume full responsibility for every item included in the structure. This situation compels the architect to give serious consideration to all the engineering elements of buildings.

This forces the consideration of the need, qualifications and duties of the architectural engineer. The matter of engineering for architects is usually handled in two ways, one of which is entirely proper and the other unwarranted. The first method is by employing several engineering organizations which specialize in each of the various branches of engineering work entering into the building. For this service they are paid a commission by the architect which is deducted from his already too small commission. In rare instances they are paid by the client, but this arrangement is apt to be construed as a tacit admission of inability on the part of the architect and often results in at first a loss of prestige and later in the entire work being turned over to the engineers. There is an objection to this method of employing engineering service, admitting each specialist to be competent, in that their work must lack a certain coordination. Each specialist engineer is concerned primarily with his own devices and too often a state of irrelation exists among the engineering parts which is detrimental to the structure. As these specialists often have their individual organizations, located at distant points with relation to each other and to the architect, it is apparent that this element alone is a great obstacle to the method. Another similar method, which is above criticism, is to have an adequate engineering organization as a part of the architects' forces, which will be discussed later.

The second usual method, an unwarranted and indefensible one, is to secure engineering services from contractors and owners of patented articles or systems of construction without cost to the architect. In this case the engineering service is usually paid for through the awarding of contracts to those who have furnished the services to the architect. Aside from the ethics, this places the architect in the position of being often compelled to use work of wrong type and of unnecessary expense for which the owner usually pays an excessive price. The evils incident to this method of procedure are too apparent to need discussion and it is not countenanced by reputable architects and engineers.

The ideal method of handling engineering work in an architect's office is to have an engineering department. An engineering corps which will render complete service to the architect, as a part of his organization, consists of a structural engineer, who is competent to design all types of steel construction and make shop details for them if necessary, a concrete engineer capable of designing and making complete drawings for reinforced concrete work, including steel lists and details; and one or more mechanical engineers, including those competent to design heating and ventilating systems, power plants, all phases of electrical work entering into building work, water supply, plumbing, sewerage, and sewerage disposal systems. Such an organization is larger than is required by firms not designing public buildings, large institutions, office buildings, and other major projects. The average architect whose practice is limited to the usual commercial and residential commissions can use a much smaller force with satisfactory results. This is accomplished by employing men who are reasonably competent in several of the branches enumerated above.

The average architect is alive to the need for such a service within his own organization as is evidenced by the present demand for engineering draftsmen in architects' offices. The members of such a corps have been referred to as engineers. They are in a strict sense merely engineering draftsmen, and such an organization, without a competent architectural engineer in charge, may be as disadvantageous to the architect as is the turning over of the structural and mechanical work to a number of independent specialized engineering organizations. In order to handle such an organization there must be an architectural engineer. What, then, constitutes this necessary architectural engineer? The architectural engineer must be an especially trained engineer who has prepared himself so as competently to direct such an organization, co-ordinating the work of the various expert engineers and engineering draftsmen with that of the architectural designers so that the completed project will be a harmoniously developed structure.

In order to do this he must be able to decide competently on the type of construction best adopted for the use and for the architectural design of the structure, considering the relative cost of all the types that could be used. Such decisions must also be made in relation to every branch of the mechanical and sanitary equipment and made during the preliminary stages of the work. To render competently this service he must be well

grounded in the essentials of all the engineering factors entering into building construction, know the relative costs of the various methods and devices in use, be able to differentiate between the initial costs and those included in operative costs so as to secure ultimate economy, and be able to prepare the drawings for each branch in a manner suitable for the use of the contractor figuring the work, the shop getting out the materials and the mechanic installing the work in the structure. Above all, he must avoid the too common practice of attempting to compel an article, apparatus or system of construction to function in a manner for which it was not intended.

To illustrate the necessity for different designs for similar problems, the writer would cite a recent instance in his office where, within three months' time, the requirements of different commissions required not less than seven different types of steam heating and ventilating systems. Among these were the so-called split system of heating and ventilating, single duct, trunk line, re-circulating, and straight gravity systems of ventilation and gravity, vapor and vacuum systems of heating with various kinds of distributing systems of piping. All these different types were used in important public works and were required owing to differences in conditions. The requirements of various structural problems, during the same period, required the designing of steel frame buildings with tile arches, "mushroom" systems, combination tile and concrete constructions, and "tin pan" and ordinary slab types of concrete construction, as well as several slow-burning designs and ordinary wood construction. It is only by considering every phase of each problem that a logical decision can be rendered as to the proper engineering for any structure and to do so the architectural engineer must be familiar with all the elements embraced in each type, as well as the comparative costs and current market conditions.

Had the average architect, who does not take engineers seriously, been confronted with these problems it is very probable that he would have employed some types of heating systems and constructions that had proved themselves reasonably satisfactory in previously executed works, rather than have made an intimate and intelligent study of each particular project. Under these conditions the client, and indirectly the architect, would eventually suffer in loss, in effectiveness and economy.

The architectural engineer of a prominent New York office recently stated to the writer that during a period of several months he found it necessary to employ eight different types of construction on various work in order to comply with the varied conditions imposed by architectural design, economical considerations and different building codes. All these designs were made by the engineering force in his office under the direction of this architectural engineer, the work was constructed in record time and without any difficulties or controversies and with *practically no extras.*

The advantages of the services of the architectural engineer to the architect are self-evident. Through his study the too common discrepancies between architectural design and construction and in the requirements of the many types of mechanical apparatus and the provisions made for accommodating them are avoided. This is accomplished because the architectural engineer has a clear and reasonably correct measurement of the requirements of each factor before the final layouts are established. This not only reduces the work of preparing drawings but also eliminates the countless changes and alterations made "at the job" due to the necessity of accommodating some unforeseen condition which was ignored in the design, or the engineering or the construction, which is such a prolific cause of the objectionable "extra."

In addition to his technical ability as an engineer the architectural engineer must be a practical, hard-headed but broad-minded business man. He must be so well fortified by a knowledge of costs and engineering values that a contractor will not be able to make substitutions or use alternate constructions of less value than originally contracted for. Unless the contract values are so safeguarded the architect suffers in the opinion of the client. In other words the architectural engineer must be a combination of an expert engineer capable of working in every branch of engineering entering into a building, an able executive and a fair and square, thoroughgoing and practical business man.

There are those who doubt if there are engineers capable of fulfilling the requirements as outlined above. The fact that a number of men are now successfully managing such work is evidence of the fact that they exist, and they are to-day recognized as leaders in the engineering profession. They will undoubtedly not only continue as leaders but will be found capable of handling additional branches of engineering should it develop that any more are required in connection with this work.

As building operations and needs increase and develop, architectural practice must develop apace. When it develops, the broad-minded architect will realize that an expert executive co-ordinating engineer is as essential a part of his organization as is the designer and there will be a demand for capable men for the work. It is certain that the successful architect of the future will have to impress on his clientele that he is not only a picture-maker, but is entirely capable of handling all en-

gineering problems as well, and the architectural engineer with his staff in an architect's organization is his only means of retaining complete control of his commissions. When the public becomes aware of the fact that any architect is capable and expert, through his organization, in all things pertaining to the work entrusted to him, there will be no need of argument or discussion as to the architect being ignored by his client in favor of the engineer. Then the architect will have assumed his rightful position as the one in entire and responsible charge of building operations.

There has been a demand for competent architectural engineers for some time and it is increasing at the present time. The manager of one of the largest companies in this country, having to do with the securing of assistants for engineers and architects, recently stated that it was practically impossible to secure architectural engineers or engineering draftsmen, since those capable of doing this work either become members or associates with large architectural firms or engage in practice as consulting engineers doing specialized branches of engineering for architects. A number of colleges and universities have courses of architectural engineering but they seem to be unable to interest students in this course which is probably due to the desire on the part of the average student to specialize in one phase of engineering. This apparently requires much less hard preparation and promises more ready returns. An architectural engineer must practically specialize in several branches of engineering and be firmly grounded in others as well, and this does not seem alluring to those who endeavor to seek comparatively easy success through specializing in one branch.

As there are real doctors who have a broad and competent knowledge of the human body and its ills, so there are real lawyers who have a thorough understanding of all phases of jurisprudence. There are also those in vast numbers who are simply doctors and lawyers and specialists. And again there are those who are simply engineers and specialists. Perhaps the facetious student quoted at the beginning of this article was unconsciously correct in the inclusiveness of his question.

Unique Construction in Reinforced Concrete

By W. R. Swanson

DURING the years since reinforced concrete was first introduced into building construction in this country, this type has been gaining numerous advocates due to its many peculiar advantages over other types of construction. Chief among these is its adaptability to meet varied conditions, owing to the fact that it is placed in a plastic state.

A condition was recently encountered in connection with the alteration and extension of a fireproof storage warehouse in Chicago, which called for the use of unusual construction.

The addition to the original building which fronts on Lawrence Avenue is 50 ft. wide by 50 ft. deep and extends the building through to a narrow alley at the rear. Certain conditions imposed by reason of the size of building lot, the nature of the owner's business and the width of the alley to which the building was extended required a peculiar arrangement of the columns as shown on the plan. The owner desired to use the greater part of the first story as a shipping court, and particularly to be able to back his large moving trucks to the elevator, located in the old building and approximately 50 ft. back from the alley line.

Since this alley is but 12 ft. wide, being one of the narrowest in Chicago, and also on account of the fact that the building lot has a frontage of but 50 ft. on the alley, it was practically impossible to place any intervening columns along the alley line. The location of even one column at the center of the 50 foot width was out of the question, since a truck would not then have had a sufficient turning radius to permit its backing up into the building.

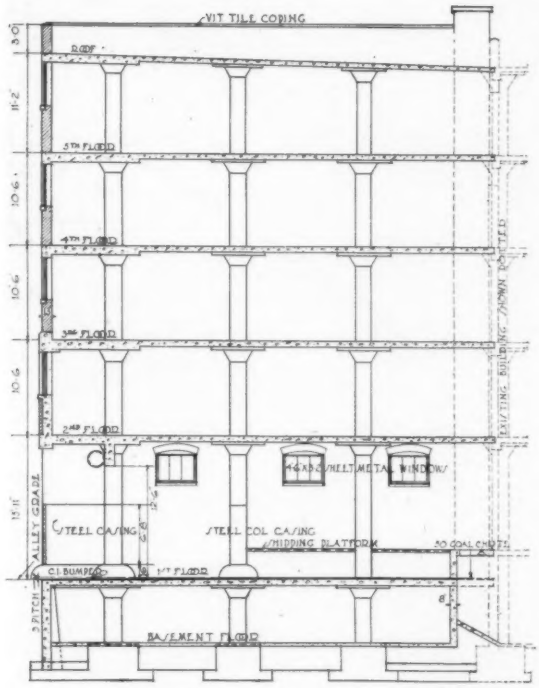
After taking into consideration the various factors involved and the necessary turning radius required for trucks of the size which would enter the building, it was found that if the columns were spaced as shown on the plan, namely set back 8 feet 6 inches from the alley line, a sufficient turning space would then be provided for all necessary trucking.

Had the wall of the building been set back this distance (8 feet 6 inches) from the alley line, the owner would have lost a valuable amount of space, viz: 8 feet 6 inches by 50 feet on all the floors above the first, and since the building is five stories high, this would have entailed a serious loss in the amount of storage space possible of rental.

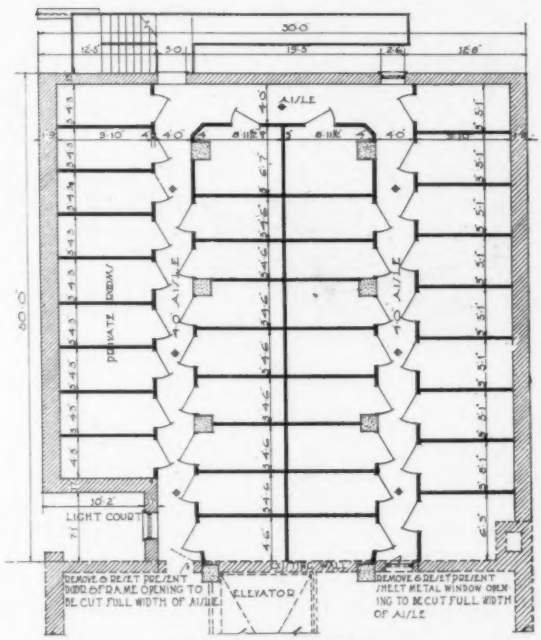
Therefore, it was most desirable to provide some

FRONT ELEVATION

REAR ELEVATION SHOWING LOCATION OF RE-INFORCED CONCRETE TRUSS IN SECOND STORY



LONGITUDINAL SECTION


AISLE
PRIVATE OFFICES
LIGHT COURT
ELEVATOR
REMOVE & REPLACE PRESENT DOOR & FRAME OPENING TO BE CUT FULL WIDTH OF AISLE
REMOVE & REPLACE PRESENT SHEET METAL WINDOW OPENING TO BE CUT FULL WIDTH OF AISLE

SECOND FLOOR PLAN

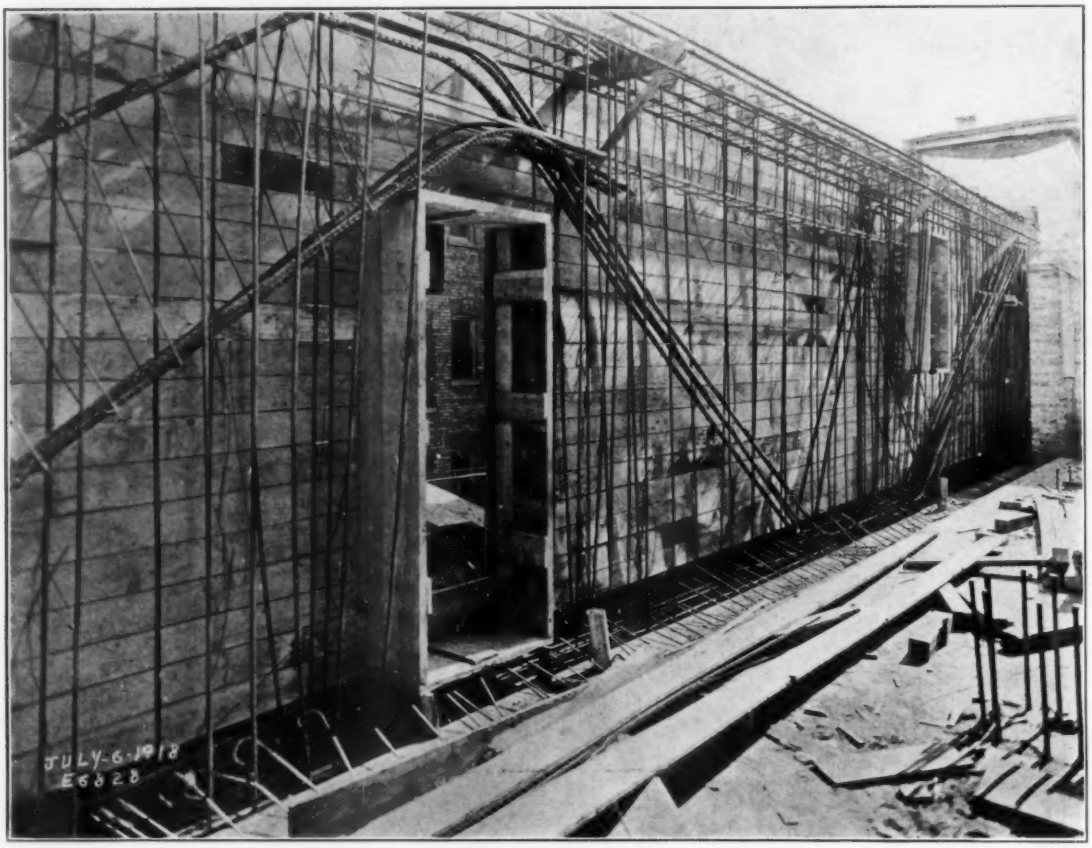
STORAGE WAREHOUSE BUILDING, CHICAGO, ILL.

S. H. DUNFORD, *ARCHITECT*—FLAT SLAB ENGINEERING CO., *CONSULTING ENGINEERS*

type of construction which would permit the necessary spacing of the first columns and at the same time allow the wall to come out to the alley line above the first story, in order to utilize the full area of the lot.

While the interior construction was designed of the reinforced flat slab type, yet a cantilever slab design which was at first considered proved to be impracticable and it was subsequently decided to use a reinforced concrete truss as shown. It will be noted that there are two necessary openings in the alley wall of the second story, one being a corridor window and the other a fire escape door. For this reason it was not possible to use reinforced concrete girder construction. In addition, these openings due to their unsymmetrical location further complicated the problem because it was thus necessary to design the truss with unequal panels. Naturally the height of this truss was limited between the second and third floor levels, and the upper and lower chord members of the truss, had in addition to the direct stresses also to be designed for bending between the panel points for the reason that the floor slabs of both the second and third floors bring a uniform load along the entire length of the upper and lower chords.

In working out this design, very careful consideration was given not only to the design proper, but also to the detailing of the reinforcing steel in order that each individual bar, stirrup, etc., should be of the proper length and fit in its proper location. Special supporting chairs were designed to accurately support the steel in a correct position and also to insure that proper bond would be obtained between the concrete and steel.

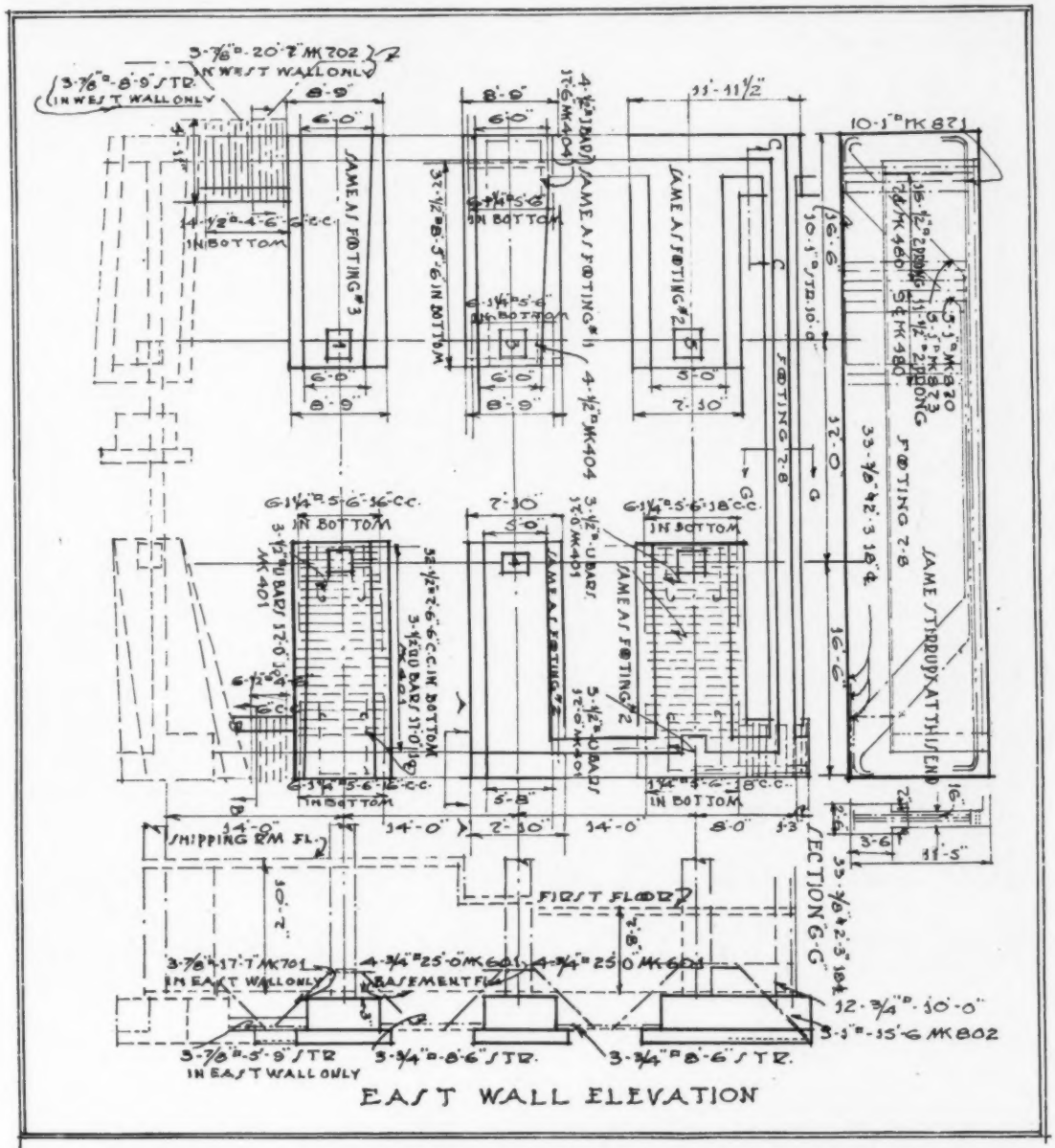


PHOTOGRAPH ILLUSTRATING METHOD OF PLACING REINFORCEMENT FOR REINFORCED CONCRETE TRUSS SO AS TO ALLOW FOR THE TWO OPENINGS

While it is not necessary to go into any detailed description as to the actual working out of the truss design, the calculation of the stresses, etc., a study of the stress diagram and drawings reproduced in connection with this article will show that such

analysis of the stress and design of the members followed as closely as possible to standard engineering practice.

rived at by adopting the deep beam type of footing which is capable of simple analysis. This design is clearly shown on the foundation plan. The



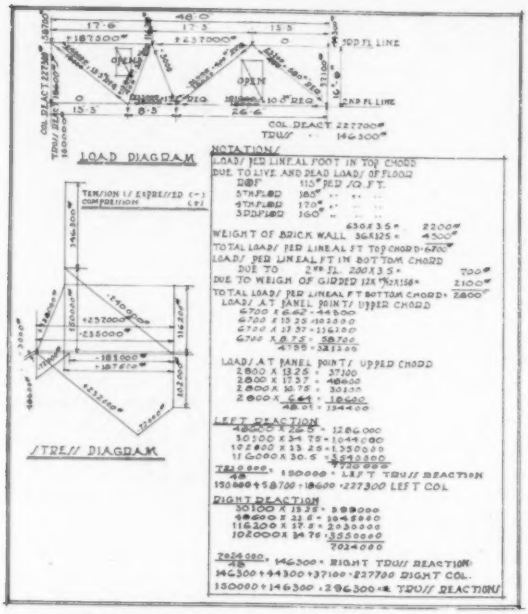
PLAN OF FOUNDATIONS FOR ADDITION TO STORAGE WAREHOUSE BUILDING, CHICAGO, ILL.

S. H. DUNFORD, *ARCHITECT*—FLAT SLAB ENGINEERING CO., *CONSULTING ENGINEERS*

Due to the heavy load brought upon the end columns carrying this reinforced concrete truss, the design of such columns and the footings presented an additional problem. The solution of this was ar-

footings for the balance of the columns are also of an interesting nature since the building, except for the truss condition at one end, is an exterior wall bearing one and the loads are brought down

and carried on continuous reinforced concrete sprandrels of the height of the basement walls. The reaction of these spandrels are carried by the combined footings shown on the foundation plan, the analysis of whose stresses are readily obtained since they follow out the usual engineering prac-



STRESS DIAGRAM AND DESIGNING DATA FOR REINFORCED CONCRETE TRUSS

tices in connection with the design of combined footings.

The completed work is shown in the photograph, and the enlarged building is now being used to the entire satisfaction of the owner.

The architect for this building was S. H. Dunford of the present Chicago firm of Moores and Dunford. The engineering work was performed by the Flat Slab Engineering Co., of Chicago.

U. S. Bureau of Standards Investigating Effect of Hydrated Lime in Concrete

ACCURATELY to determine the effect which lime has on concrete is an intricate proposition; there is so much more to the question than was supposed when the investigational work was started a few years ago. The main point is, of course, does hydrated lime produce an increase in the compressive strength of concrete? This whole question of the development of strength in concrete as a general proposition finally has been run down after years of close study by prominent investigators to a point where it is now definitely established that the strength of concrete depends to a very large extent upon the quantity of water used during the process of mixing and placing. This is true whether hydrated lime is used or not. The length of time of mixing, quantity of cement, etc., are factors, which, of course, must be taken into consideration and controlled in making tests, but as mentioned, the quantity of water is the real big element.

Another important factor which must be taken into consideration in conjunction with the development of strength is the workability of the concrete. These two subjects must go hand in hand and be developed together, as it appears now that the effect of lime on workability will determine the future action on this subject.

It is now known that by using smaller quantities of water the strength of concrete is increased, also when water is used in quantities which produce high compressive strengths the concrete is not sufficiently workable and cannot be placed without excessive labor charges. This is a practical condition which must be met, consequently the larger and excessive quantities of water are used in field work. If the lime introduces into the mixture a degree of workability which permits the concrete to be placed with smaller quantities of water, then the ultimate strength will be automatically increased.

Up to the present time there has not been developed a method for accurately measuring the workability of concrete mixtures. This is the problem upon which the Bureau of Standards is now working and it seems likely that it will be developed in the near future.

Random Notes on Lime

A representation of the Dutch Lime Manufacturers' Association, recently visited this country to secure information relative to the uses and applications of burnt lime products as developed in the United States. They made a special study of modern methods of manufacturing and handling lime, with a view to improving the Dutch lime industry so that it may be better prepared to meet the problems presented by the present reconstruction period.

The commission put itself in touch with the staff of the National Lime Association, through which an itinerary was arranged that enabled them to visit several of the most up-to-date plants in this country and to examine various types of kilns, hydrators, automatic handling devices and other means of modern lime production and distribution.

Walls Stained with Cabot's Stucco Stains. Bigelow & Wadsworth, Architects, Boston.

CABOT'S
Waterproof Stucco Stains

Soft, Artistic and Durable Colors
Completely and Permanently Water-proof

These stains cure both of the great defects of cement as a building material, i. e., its porous character and its cold, cheerless monotony of color. They thoroughly water-proof the surface and color it in soft, rich tones without covering or spoiling the texture. They are not "painty" and cannot crack, or chalk, or peel. They are cheap, easy to apply and beautiful.

You can get Cabot's goods all over the country. Send for stained wood samples and name of nearest agent.

SAMUEL CABOT, Inc., MFG. CHEMISTS **BOSTON**
1133 Broadway, NEW YORK 24 West Kinzie St., CHICAGO
Cabot's Stucco and Brick Stains, "Quilt," Damp-proofing, Conservo Wood Preservative, etc., etc.

ARCHITECTURAL WOODWORK
TRIM AND CABINET WORK
CHURCH, BANK AND OFFICE
INTERIORS AND CARVINGS

SHIP AND YACHT JOINERY
PERIOD MANTELS, STAIRWAYS
SPECIAL FURNITURE AND
REPRODUCTIONS TO ORDER

THE HARRIMAN INDUSTRIAL CORPORATION
WORKS AT HARRIMAN, NEW YORK

NEW YORK OFFICE
475 FIFTH AVENUE
TELEPHONE, MURRAY HILL, 6762

HARRIMAN
QUALITY
WOODWORK

American Clay-Working Machinery Co., Bucyrus, Ohio, using 6 48-inch Metal-Top "Burt" Ventilators on machine shop 100x350

BURT
is synonymous with
GOOD VENTILATION

Burt Ventilators have a wide application to factories, schools, public buildings and fine residences.

Impure air, smoke, steam or gas is taken out of any building automatically by them, and without any expense other than the first cost of the Burts.

The use of Burt Ventilators on private homes is a comparatively new idea which commends itself to modern building construction. The attic is generally dark and dusty, and insufferably hot in summer.

When a residence is fitted with one or more Burt Glass-Top Ventilators, the attic is reclaimed, for it becomes a well-lighted room, fit for any purpose.

Burts can be adjusted to any desired degree of ventilation and they are storm-proof.

The important industrial concerns whose buildings are completely equipped with Burts, to say nothing of the many other installations, are ample proof of Burt efficiency and dependability. Burts can be furnished in sizes and designs to suit any type of building.

Burt Manufacturing Company
Akron, Ohio

Late Quotations in Building Material Markets

(Price quotations now current on building materials and supplies as quoted by dealers and jobbers for delivery in New York, Chicago, San Francisco Seattle, and Birmingham follow. The quotations set forth are placed before readers of THE AMERICAN ARCHITECT to afford an accurate review, of market conditions, rather than for use as a basis for actual purchase. They will not only provide knowledge of the exact state of the market as to items quoted but will also present a basis to judge conditions as affecting correlating materials.

	New York	Chicago	San Francisco	Seattle	Birmingham
BRICK					
Common	$30.45	$14.00	$15.00	.....	.....
Face brick	55.00 to 60.00	30.00 to 40.00	46.50	.....	.....
BURNED CLAY (Delivered on Job)					
Block partition:					
3 in., per sq. ft	0.13	0.10	.....	.....	.....
4 in., per sq. ft	0.15	0.11	.....	.....	.....
Wall coping (single slant):					
8 in., per lin. ft	0.16	0.14	.....	.....	.....
12 in., per ft	0.26½	0.22	.....	.....	.....
18 in., per ft	0.54	0.36	.....	.....	.....
(Corners and angles four times the price of one foot of coping the same size.)					
CEMENT					
Per bbl. in 15-cent bags (rebate 60 cents per bbl. for bags)	3.40	3.10	3.63	$4.25	.....
FINISHED IRON AND SUEEL (Mill Shipments)					
Bar iron, refined grade	.....	.....	.....	.....	.....
Bar iron, double refined	.....	.....	.....	.....	.....
Soft steel bars	2.62 to 4.27	.....	.....	.....	.....
Shapes	2.72 to 2.82	.....	.....	.....	.....
GLASS (Discounts from Manufacturer's Price Lists)					
Single strength, A quality, first three brackets	75%	77%	.....	.....	.....
Single strength, B quality	75%	77%	.....	.....	.....
Double strength, A quality	77%	79%	.....	.....	.....
Double strength, B quality	79%	81%	.....	.....	.....
GYPSUM					
Plaster board:					
27x28x1	.....	.....	.....	.....	.....
27x48x ½	0.45	.....	.....	.....	.....
32x36x ¼	0.28	0.20	.....	.....	.....
32x36x ⅜	0.29	0.21½	.....	.....	.....
32x36x ½	0.35	.....	.....	.....	.....
Plaster blocks:					
2 in. solid, 12x30, per sq. ft	0.13	.....	.....	.....	.....
3 in. hollow, 12x30, per sq. ft	0.13	.....	.....	.....	.....
4 in. hollow, 12x30, per sq. ft	0.14	.....	.....	.....	.....
6 in. hollow, 12x30, per sq. ft	0.21¾	.....	.....	.....	.....
HOLLOW TILE					
2x 8x12 partitions, per 1,000 sq. ft	102.70	102.70	75.00	.....	.....
3x12x12 partitions, per 1,000 sq. ft	102.70	109.60	105.00	.....	.....
4x12x12 partitions, per 1,000 sq. ft	114.75	150.00	113.00	.....	.....
6x12x12 partitions, per 1,000 sq. ft	153.00	205.20	142.00	.....	.....
8x12x12 partitions, per 1,000 sq. ft	.....	.....	208.00	.....	.....
10x12x12 partitions, per 1,000 sq. ft	.....	.....	.....	.....	.....
12x12x12 partitions, per 1,000 sq. ft	.....	.....	.....	.....	.....
2x12x12 split furring, per 1,000 sq. ft	.....	.....	.....	.....	.....
LATH					
Eastern spruce, per thousand	20.00	16.00 to 18.00	18.00	.....	.....
No. 1 white pine, per thousand	18.00	16.00 to 18.00	18.00	.....	.....
No 1 hemlock, per thousand	18.00	.....	18.00	.....	.....
No. 1 yellow pine, per thousand	18.00	16.00 to 18.00	18.00	.....	.....
LIME					
Common, 200 lb. bbls., per bbl	3.80	1.60	.....	.....	.....
Finishing, 300 lb. bbls., per bbl	19.50	18.00	.....	.....	.....
Hydrated, in paper bags, per ton	4.00	.....	.....	.....	.....
LUMBER (Retail Prices per Thousand Delivered)					
Yellow pine, No. 1 boards, 1x6	80.00	75.00	.....	.....	.....
Yellow pine, B, and better flooring (plain)	130.00	125.00	.....	.....	.....
Douglas fir, 6x6 to 12x12	80.00	71.00	.....	.....	.....
Oak, quartered, 1 in., F. A. S	325.00	285.00	.....	.....	.....
Oak, plain, 1 in., F. A. S	225.00	210.00	.....	.....	.....
Oak flooring, ¼ quartered, white	220.00	295.00	.....	.....	.....
Maple, 1 in., F. A. S	180.00	185.00	.....	.....	.....
Maple flooring, ¼ clear	175.00	150.00	.....	.....	.....
Mahogany, 1 in., F. A. S	.....	350.00	.....	.....	.....
Spruce, 10 in	85.00	85.00	.....	.....	.....
Cypress, 1 in., F. A. S	150.00	130.00	.....	.....	.....
METAL LATH					
Under 100 sq. yd., per sq. yd	0.40	.....	.....	.....	.....

Arrangements are being perfected which will secure comparative figures for Seattle and Birmingham.

Photo© Jessie Tarbox Beals, N. Y.

Where "85% Magnesia" Saves Coal

THOSE brilliant lights of the Plaza Hotel, gleaming aloft over Central Park, tell nightly a story of *coal-saving* by "85% Magnesia". Heating, Lighting and Power depend upon "85% Magnesia" pipe and boiler coverings.

Without such steam protection the coal-wastage would be enormous, prohibitive.

All over America this matchless Coal-Saver protects the steam pipes and boilers of the largest hotels, department stores, skyscrapers, public buildings, railway terminals, and the Power Plants where the closest coal-economy is studied.

The coal-saving necessary in the biggest heating and power plants is imperative in every plant—yours, for instance.

Every few months the coal-saving wrought by "85% Magnesia" pays the entire cost of its installation.

The Whole Story

Write us for new Treatise, "Defend Your Steam," which describes the triumphs, the fields and uses of "85% Magnesia."

Specification for Engineers

The Mellon Institute of Industrial Research of Pittsburgh University, after three years spent in developing the principles of Coal-Saving by Insulation, has compiled a Standard *Specification* for the scientific use of "85% Magnesia" pipe and boiler coverings.

Write to the Secretary of the Association for a copy.

MAGNESIA ASSOCIATION *of* AMERICA, 721 Bulletin Building, Philadelphia, Penna.

EXECUTIVE COMMITTEE, W. A. Macan, Chairman

George D. Crabbs, The Philip Carey Co., Cincinnati, Ohio
Alvin M. Ehret, Ehret Magnesia Mfg. Co., Valley Forge, Penna.
J. R. Swift, The Franklin Mfg. Co., Franklin, Penna
Richard V. Mattison, Jr., Keasby & Mattison Co., Ambler, Penna.

Copyright, 1919, by M. A. of A. Permission to reprint by application.

Late Quotations in Building Material Markets—*Continued*

	New York	Chicago	San Francisco	Seattle	Birmingham
PIPE					
Cast iron:					
6 in. and heavier	$67.30	.....	.....	.....	.....
4 in	70.30	.....	.....	.....	.....
3 in	.....	.....	.....	.....	.....
(And $2 additional for Class A and gas pipe)					
(Discounts to jobbers for carload lots on the Pittsburgh basing card; freight rates from Pittsburgh to New York, and also from Pittsburgh to Chicago, in carloads, per 100 lbs., are 27c. An additional 5 per cent discount is allowed to large jobbing interests over those listed below.)					
	F.O.B. Pittsburgh Butt Weld	F.O.B. Chicago			
Wrought:					
Steel:					
Black, ⅛ to 3 in	47 to 54 %	42.6 to 49.6%	.....	.....	.....
Galv., ⅛ to 3 in	20½ to 41½%	14.6 to 34.6%	.....	.....	.....
Iron:					
Black, ⅛ to 1½ in	29½ to 34½%	19.6 to 29.6%	.....	.....	.....
Galv., ⅛ to 1½ in	2½ to 23½%	9.4 to 11.6%	.....	.....	.....
	Lap Weld				
Steel:					
Black, 2½ to 6 in	50 %	45.6%	.....	.....	.....
Galv., 2½ to 6 in	37½%	31.6%	.....	.....	.....
Iron:					
Black, 2½ to 6 in	34½%	24.6%	.....	.....	.....
Galv., 2½ to 6 in	21½%	9.6%	.....	.....	.....
PLASTER					
Neat wall cement in 15-cent bags, per ton	23.50	19.00	18.50 to 20.00*	.....	.....
Finishing plaster	25.00	19.50	19.50 to 21.00*	.....	.....
Lath mortar, in cloth bags, per ton	16.50	.....	.....	.....	.....
RADIATION					
Discount from list on standard heights	45%	44.3 to 45.9	.....	.....	.....
REINFORCING BARS					
High carbon steel from mill	48.50	.....	4.00	.....	.....
Medium steel from mill	48.50	.....	4.00	.....	.....
ROOFING MATERIAL					
Tarred felt paper:					
No. 1—25 lbs. to 100 sq. ft., per ton	81.00*	85.00	.....	.....	.....
No. 2—16 lbs. to 100 sq. ft., per ton	81.25*	85.00	.....	.....	.....
No. 3—12 lbs. to 100 sq. ft., per ton	81.63	85.00	.....	.....	.....
Rosin sized sheathing, per ton	75.00	79.00	.....	.....	.....
Corrugated roofing, galvanized, 2½ in. corrugation, over flat sheets, 30 cents per 100 lbs	0.30	.....	.....	.....	.....
SHINGLES					
Red cedar, 5 to 2, clear, per thousand	15.00	.....	16.00	.....	.....
White cedar, extra star, A star, per thousand	16.00	.....	17.00	.....	.....
SLATE ROOFING					
	F.O.B. Cars Quarry Station				
Pennsylvania:					
Best Bangor	$7.75 to $9.00	.....	.....	.....	.....
No. 1 Bangor Ribbon	6.75 to 7.00	.....	.....	.....	.....
Pen Argyl	6.50 to 7.25	.....	.....	.....	.....
Peach Bottom	10.50 to 12.50	.....	.....	.....	.....
No. 1 Chapman	6.25 to 7.25	.....	.....	.....	.....
Vermont:					
No. 1 Sea Green	5.00 to 8.50	7.31 to 11.06	.....	.....	.....
Unfading Green	9.00 to 10.50	.....	.....	.....	.....
Red	12.00 to 20.00	.....	.....	.....	.....
Maine:					
Brownsville, U'f'g Black, No. 1	12.00	.....	.....	.....	.....
Slaters' felt, 30 lb. roll	0.92	.....	.....	.....	.....
Slaters' felt, 40 lb. roll	1.22	.....	.....	.....	.....
STRUCTURAL STEEL					
Beams and channel, 3 to 15 in., per lb	3.47	3.47	4.70	.....	.....
Beams and channel, over 15 in., per lb	3.57	3.57	4.70	.....	.....
Angles, 3 to 6 in	3.47	3.47	4.70	.....	.....
Zees and tees	3.57	3.47 to 3.52	.....	.....	.....
Steel bars, half extras, from mill	.....	.....	4.60	.....	.....
STUCCO					
In cloth, per ton (white, mixed)	22.50	19.50	.....	.....	.....
STUCCO BOARD					
Medium weight stucco board, plain, per thousand sq. ft	42.50	45.00	.....	.....	.....
Medium weight stucco board, creosoted, per thousand sq. ft	50.00	50.00	.....	.....	.....
Heavy weight stucco board, plain, per thousand sq. ft	55.00	55.00	.....	.....	.....
Heavy weight stucco board, creosoted, per thousand sq. ft	60.00	60.00	.....	.....	.....
Medium weight stucco board, plain, narrow key, per thousand sq. ft	50.00	50.00	.....	.....	.....
Medium weight stucco board, narrow key, creosoted, per thousand sq. ft	55.00	55.00	.....	.....	.....
Insulating board, heavy felt background, per thousand sq. ft	50.00	50.00	.....	.....	.....
SHEATHING BOARD					
Heavy weight sheathing board, per thousand sq. ft	50.00	50.00	.....	.....	.....
Medium weight sheathing board, per thousand sq. ft	46.00	45.00	.....	.....	.....
Stucco or plaster board, sheathing board and insulating board are in rolls containing one sheet 25 ft. long and 4 ft. wide (100 sq. ft.).					
WALL BOARD					
Wall board, shipped any length, 4 ft. wide, per thousand	45.00	40.00	.....	.....	.....
Packed flat in cars if ordered in less than car lots. Add $5.00 per thousand ft. for crating.					

Arrangements are being perfected which will secure comparative figures for Seattle and Birmingham.